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ACCESS TO DRUGS AND FINANCE

Basic economic and financial analysis

ACTION PROGRAMME ON ESSENTIAL DRUGS AND VACCINES
PROGRAMME D'ACTION POUR LES MÉDICAMENTS ET VACCINS ESSENTIELS

Geneva, 1991

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1991

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PREFACE

In the 1980s the economic recession and structural adjustment policies affected vulnerable populations most severely, especially women and children in underprivileged areas. In many countries of sub-Saharan Africa and Latin America, levels of nutrition, education and access to health care deteriorated.

Debt servicing and the fall in export prices still sap the budget of many Third World countries, while the new East-West relations and the Gulf crisis are already adding further economic difficulties. In such conditions, the financing of public health services and especially the supply of drugs, are seriously compromised. Since many Third World countries depend on imports for their drug supplies, the drain on their foreign currency holdings and income will seriously affect the availability of drugs.

The Action Programme on Essential Drugs is a response to the imbalance in the economic and technological situation that prevents a large part of the world's population from having access to essential drugs and vaccines. It was born of the need for Member States to ensure that the entire population enjoy regular supplies **at the lowest possible cost**, and rational use, of a certain number of safe and effective, good-quality drugs and vaccines.

In view of the alarming situation with regard to availability and use of drugs in developing countries, the Action Programme continues to aim most of its technical and financial support at the countries of the Third World, while recognizing the need to improve rational use of drugs throughout the world.

The current crisis makes the problem still more urgent and calls for a re-think of methods for financing drug consumption. Can the people of developing countries take care of this sector, to which the authorities can no longer devote the necessary resources? Is state disengagement acceptable and inevitable? What are the alternatives for the authorities and consumers?

In the face of sudden cuts in public financing of drugs, a plethora of different ways of meeting these costs are being tried by teams, projects, governmental and nongovernmental institutions, but little specific and critical evaluation has taken place. It is clear that such an examination is urgently needed.

The Action Programme on Essential Drugs, therefore, considering that economic and financial constraints constitute a key element of drug policy, decided to develop a framework that could be used for economic and financial analysis of pharmaceutical policies based on the essential drugs strategy.

Although the concept of essential drugs is widely accepted, many countries have not yet fully appreciated the economic and health benefits to be gained from adoption of such a policy. The Action Programme intends to continue its promotion and training activities so that this concept, and its economic and health advantages, are better recognized and used by countries. **The essential drugs policy is no longer an option but a pressing need.**

This book also goes some way towards fulfilling the request that the Forty-second World Health Assembly made to the Director-General:

- "To undertake economic analyses in support of improved resource allocation for the health sector; and to assist Member States, in view of the problems posed for developing countries by the international burden of debt and other economic pressures, to develop the capacity to undertake economic analyses that can support improved resource allocation for the health sector; where appropriate, organizations with competence in economic research could be encouraged to cooperate in these activities;

- "To strengthen economic and financial analytical capabilities in the work of WHO at all levels through training, appropriate policy analysis and sustained information support, in order to enable countries to rationalize the appropriate use of their limited resources and to search for alternative mechanisms for financing health activities, involving nongovernmental sectors;"
  (from WHA42.4, Strengthening support to countries for rationalization of the financing of health care services).

As its subtitle suggests, the document is a first overall examination, a starting point from which the Programme will develop its ideas, analyses and proposals.

We thank the three co-authors of this text who worked on it for a year and a half, as well as those inside and outside the World Health Organization who read the text and made contributions, suggestions and comments: H.T.J. Chabot (Royal Tropical Institute, Amsterdam); J.W. Harnmeijer (Royal Tropical Institute, Amsterdam); F. Lobo (Universidad Carlos III, Madrid); A. Mabiala-Ngoulou (Ministry of Health, Congo); E. Mach (Council for International Organizations of Medical Sciences/WHO); M. Sow (Ministry of Health, Benin); G. Carrin (Office of International Cooperation, WHO); A. Creese (National Health Systems and Policies Unit, WHO), and the team of the Action programme on Essential Drugs.

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Objective and method:

This document is intended for national managers of pharmaceutical sectors. It aims to provide the tools for development of economic and financial analyses that will enable them to design and operate pharmaceutical policies based on the essential drugs strategy.

It should help to answer the following questions:

- How can a national pharmaceutical situation be analysed from the economic point of view?
- How can all the traffic and all the agents in the pharmaceutical sector be identified?
- How can the resources be found to finance essential drug supply and consumption for a country and its population?
- When health services are suffering from financial crisis, is there an alternative to state withdrawal and transfer of drug financing to patients or the population?

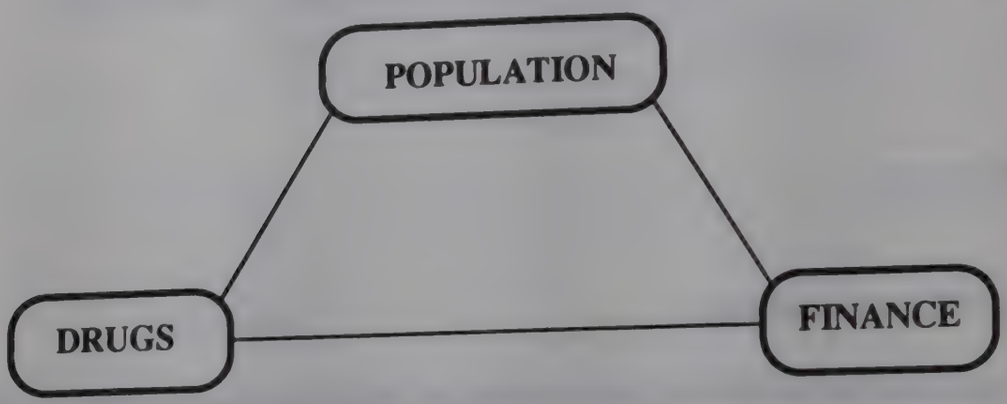
This document provides no ready-made solutions to the major problems confronting developing countries with regard to drug supply and access to health services for the greatest possible numbers. Its aim is rather to help those responsible for pharmaceutical policies to achieve the greatest possible awareness of the economic and financial factors which influence the drug sector and which point towards adoption and use of an essential drugs policy.

The first part of this document therefore shows why and how to build up a central **"control panel"** for diagnosing the economic situation of the drug sector in a country, monitoring its development by means of a small number of selected indicators.

The second part of the document examines the nature of the problem of finance, considering both national supply problems and consumer problems. An analytic method is proposed for organizing reforms in the financing and management of the drug sector.

This document provides a general framework for analysis of the economic and financial situation with regard to drugs, flexible enough to be adapted to any country. Yet it is not a practical guide which is immediately usable: the reality is too varied for that. Subjects can be treated with varying degrees of detail that will depend on users' needs and on accessibility of data. The analysis presented here is based on three interrelated points:

- the population, its needs and resources;
- drugs, drug markets and distribution;
- finance, its sources and practical arrangements.



What this document provides:

Its first contribution is in the basic approach it suggests: it shows that the economic point of view, far from being at odds with the public health point of view, supports it. The point is illustrated with the case of essential drugs, with an economic analysis focusing on people, and with the experience of a great number of countries.

Its second major contribution is in the method it proposes for organizing information that can give a picture of the pharmaceutical sector and help with the development and implementation of policies based on essential drugs: it is a matter of beginning with the questions one should ask in order to obtain indicators that can provide answers, in the order of priority appropriate to each context.

In the first part, which deals with **"tools for diagnosis of a national drug economics situation"**, a series of indicators is proposed for evaluation of the country situation at a given moment.

The first to be identified are the economic and health indicators which determine the national situation as a whole, after which questions on drug expenditure are used to bring out a variety of indicators and tools for analysis of the drug situation to answer the following questions: What is the overall level of expenditure? What is its structure? Who pays and who benefits? Who are the main agents in the drug sector? Are there potential savings to be made? How autonomous is the country as regards drug procurement?

The need to know who is sending what round the drug circuit finds expression in this document in the building up of "national drug accounts", which form an interrelated group: procurement, distribution, consumption and financing.

The aims, the concepts and the methods of preparing accounts are given along with the conditions and limitations of the accounting and financing operations. These national drug

accounts are supplemented with "associated indicators" which are connected with the economic operations described in the accounts: procurement, distribution, consumption and finance. These associated indicators give a better picture of the circulation already described, dealing with such subjects as prices, costs, and drug selection.

A great deal of attention in this document is devoted to quality of information and data gathering for analysis of the situation and deciding who is sending what drugs where.

The second part deals with **"diagrams and alternative methods of financing an essential drug supply".**

The document restates the objective of systems for financing essential drugs: to ensure regular supplies of drugs, promoting equity and efficiency within health services. The document then identifies the operational objectives, which are criteria for an effective financing strategy:

- not to endanger the country's economy;
- provision of sufficient financial resources;
- helping the people gain access to essential drugs;
- organization of rational management of drug distribution.

The analysis developed in this document shows that financial problems are not simply a matter of seeking out new financial resources, even though that is essential in the long run. In many countries, the resources already available at national level (state and population) are far from being used to the greatest collective advantage. There are inconsistencies in drug policies, and developing countries do not make enough of the potential of the international drug market.

The document examines conditions for organization of the financing of national procurement and addresses the following questions:

- In what circumstances is local production preferable to importation of finished products?
- How can external purchasing of drugs be organized so as to reduce costs?
- How can a negotiating position be strengthened, taking advantage of the possibilities of competitive markets?
- How much foreign currency is needed, how can it be obtained and how should it be managed?
- How can local agents (importers, distributors, information officers, prescribers, purchasers and consumers) be organized in order to ensure regular supplies for the country at the lowest cost?

Clearly there is no simple answer to these questions; the document examines a number of scenarios and proposes desirable solutions in the context of an essential drugs strategy. Great improvements are possible if the negotiating position of countries is strengthened by setting priorities, choosing an adequate number of drugs to increase the market share and become a more important buyer; centralizing purchasing at national level, or even of regional or international level (UNIPAC etc.); arranging for quality control, and behaving like a buyer who is aware of the potential and procedures of the international market.

This calls for the help of international organizations and cooperation institutions, which should organize the support and technical and financial back-up for countries wishing to adopt an essential drugs policy. Access to information about the international market, especially about products, prices, technologies, suppliers, payment and delivery terms, is essential.

The sources and methods of financing consumption which dictate the actual access of people to drugs are the other side of the finance problem dealt with in this document.

A number of options are assessed for their advantages and disadvantages in terms of the specific risk of illness and of their effects on social and economic access to treatment and drugs. Methods ranging from full state financing to direct payment by the patient have been tried here and there in various countries. Those which organize indirect financing and extended community solidarity, where possible, are the most equitable. These are more difficult to organize since they are determined both by the level of economic development and by the existence of health services which are effective and trusted by the population. Direct financing of care and drugs by the consumer is often the result of state abnegation of responsibility for public health.

There is no ideal way of financing drug consumption. Methods arising from administrative convenience alone tend to cause wastage and shortages. More commercial methods lead to high costs for the country and the population, especially its underprivileged groups.

Financial strategies based on cost recovery and community financing can generate new resources and lead to more stringent management. Such strategies increase the availability of drugs. Yet they can only be viable if they are part of an essential drugs policy which is seen as the only procurement policy: the solution for many countries is not first and foremost in cost recovery or cost sharing, but in cost reduction and improvement of the quality of health services.

GENERAL INTRODUCTION

1. The problems

The essential drugs policy is a fundamental component of national health policy: based on the notion of primary health care, it aims to "ensure for all people the regular supply and rational use of safe and effective drugs of acceptable quality at the lowest possible cost in order to reach the overall objective of health for all by the year 2000 through health systems based on primary health care" (1). To varying degrees, the idea of essential drugs has inspired a large number of pharmaceutical policies (2).

In the 1980s, many developing countries, especially those of sub-Saharan Africa, encountered the gravest problems they had ever met. Except in a few Asian countries, there was either no economic growth or even recession in some years. The fall in the price of raw materials and commodities devastated their export earnings. The foreign debt of most African and Latin American countries became a heavy burden on their economies. Structural adjustment programmes have striven to redress the external economic balance, reduce budget deficits and inflation, and foster saving, investment and growth. This renewal is precarious. The most vulnerable people, such as women and children in underprivileged environments, have been hardest hit by the economic recession and adjustment policies. In many countries of sub-Saharan Africa and Latin America, nutritional status, infant schooling and access to health care have deteriorated.

Such countries have serious problems in paying their pharmaceutical bills. This has brought systems for the financing of drug supplies into crisis (3). The aim of universal access to essential drugs is jeopardized in many countries by economic factors. The problem is that of improving economies while continuing to satisfy basic human needs (4).

This situation does not put the essential drugs policies in doubt: quite the reverse. The problem of how to use slender resources has always been at the nub of those policies: the concept of essential drugs offers criteria for choices that must be made in pursuit of the two objectives of rational management of resources and promotion of public health. The present crisis makes the problem even more acute and calls for a rethink of the methods for financing the consumption of drugs: can the people take over from states that cannot provide the resources they once supplied? Economic and financial constraints therefore become a key element in pharmaceutical policies.

The news is not all bad: the world drug market has seen increasing sales of generic drugs and more competition for such drugs. Many patents are expiring, and increasing numbers of companies are coming into this booming market. This can give the poorest countries and people access to essential drugs at low price in the form of generic drugs.

1 WHO. *The Use of Essential Drugs*, third report of the WHO Expert Committee, Geneva, 1988, Technical Report Series, 770, p. 20.

2 WHO. *The World Drug Situation*, Geneva, 1988.

3 The World Bank. *Financing Health Services in Developing Countries, an Agenda for a Reform*, Washington, The World Bank, 1987.

4 UNICEF. *Adjustment with a Human Face*, New York, 1987.

Essential drug policies should include economic and financial components based on precise analysis of the economic context, the better to benefit from and adapt to the situation.

2. OBJECTIVES

Given that the poor have less access to drugs when the financing of health systems is in crisis, what are the alternatives to having the users pay more and more of the cost of the drugs? Are state withdrawal and consequent social crisis the only possible "economic" option? What economic and financial tools do those in charge of pharmaceutical policies need?

The aim of this document is to provide those responsible for national essential drug policies and their research assistants with the means for such analysis, showing how to analyse the pharmaceutical situation of a country from the economic point of view and how to organize the financing of consumption of essential drugs and their management.

We therefore propose an economic analysis method for implementation of essential drug policies. It is not a practical guide, much less a handbook with detailed solutions. The objective is at a higher level: we seek to identify the questions that should be asked, and the statistical indicators from which the answers could be drawn. The objective includes both economic policy and instruments for observation.

3. CONCEPTS

The concepts used will be defined as and when they appear in the text. At this point, we shall define a few general concepts.

The concept of economy and public health

The thesis put forward here is that the economic point of view is compatible with the public health point of view. The most generally recognized economic criterion is the principle of **efficiency**: how to obtain best results from given economic resources (or how to achieve certain results with the minimum of resources). This quest for the best possible use of resources is the business of public health, where meagre resources have to be managed. The criterion of efficiency states that, given the same results in terms of health, it is better if less resources are consumed.

The principle of **equity** is another economic principle which also figures in public health. Some economists maintain that the principle of equity can come into conflict with the principle of efficiency, so that only the latter is a matter of economics, equity deriving from ethical or political values. According to this idea (the Pareto theory), the economist cannot compare the usefulness of goods between individuals, since such usefulness can only be judged subjectively by the individuals concerned. This theoretical approach is not that of all economists and is unacceptable in public health, which is based on objective and universal evaluations of the usefulness of drugs.

Designating the general objective of justice, the principle of equity is used in two ways:

1. At the microeconomic level, where it means that the exchange is just: for example, that the drugs are sold at a just price (1). This document does not deal with that understanding of the principle of equity.

2. At the macroeconomic level, where the principle of equity involves trying to reduce inequities (2). In the field of public health the two criteria of efficiency and equity are not in opposition. A more equal distribution of resources, such as drugs, is often more efficient than less equitable distribution, since it provides a higher level of satisfaction of the needs of the whole population concerned.

We must then ask for what population the efficiency is measured: for a particular category or for the entire population of a country? Efficiency and equity are measured in the same social context: for a given population, efficiency and equity are two sides of the same coin. Thus, it is often efficient from the public health point of view to slightly reduce the drug consumption of social categories whose consumption is very high, in order to increase the consumption of social categories which consume little or no drugs. In the social context that includes these two categories of population, therefore, the quest for equity can help to achieve efficiency.

Economics and finance

Financial matters and funding come under economy, but economy cannot be reduced to financial problems. We speak of finance when dealing with monetary values (money), as a means (financial resources) or an end (financial profit). Economics is a much larger field, which embraces both "real" means (work done by human resources, and material resources, such as drugs) and ends of different kinds, especially the satisfaction of human needs. A complete economic analysis of financial problems should aim to establish the relations between the field of financial problems and that of "real" problems.

To designate the economy of these monetary values, the term **finance** will be used in preference to **payment** or **cost-recovery**, since its meaning is wider. Payment denotes the transfer of money, often in exchange for merchandise or in repayment of debt. Drug supplies have to be paid for, but whether they should be paid for by the consumers is another matter. The term "finance" therefore is used, since it covers all possible ways of conveying money to the producers and distributors of drugs.

The term "cost-recovery" designates a policy whereby patients and the population are made to cover health expenditure already made by the state. The term cannot be used for general analysis of financial problems, since it implies that that policy is the only possible or desirable one. Other policies are possible and worthy of consideration.

1 Management Sciences for Health. *Managing Drug Supply*, 1982

2 B. Abel-Smith, A. Leiseron. *Making the Most of Scarce Resources*, World Health Forum, I (1, 2) 142-152 (1980)

4. TOOLS

Economic evaluation has an objective (absolute) and a subjective (relative) side. The objective side is measurement of the economic magnitudes for the most objective possible description of a situation. This is a matter of **indicators**. The subjective side seeks to determine whether a situation is good or bad, so that a decision can be made. This judgement is made with reference to standards.

In economics as in medicine or in other sectors, indicators are used in order to establish a diagnosis - to ascertain, in other words, whether or not a phenomenon is satisfactory. We decide whether or not a phenomenon is satisfactory by comparing the indicator to a standard. What is a standard? A standard is the value of the indicator of a phenomenon that is considered satisfactory. For example, if 85% of an age group has been fully vaccinated, or if the period required for restocking of a pharmacy is less than a week, the situation is satisfactory. If the level of the standard is that which the indicator must reach if the phenomenon is to be regarded as satisfactory, a standard becomes a target.

In most cases, however, an indicator taken in isolation is difficult to interpret, since the judgement it affords of a situation depends on other indicators. Standards are, for this reason, very difficult to establish. For example, the time it should take to restock a pharmacy depends on its reserve stock. Diagnosis can therefore not be made on the basis of an indicator considered out of context.

This explains in part why we do not have a set of standards to offer for economic indicators. Another reason is that we have few measures of economic indicators of pharmaceutical systems that refer to the level of satisfaction with which these systems operate.

Nevertheless, an attempt must be made to compare the indicators measured with other measurements either in space or in time. In space, by comparing one region or country to another, we can form an impression of the gravity of the situation. Comparison over time is a matter of analysing changes in an indicator. This shows whether the situation is improving or deteriorating.

In many countries there are few statistics, and those which exist are often of poor quality. No country ever has all the statistics one might want. There are always missing data, and some unreliable data. This situation, which is certainly worse in some countries than in others, gives rise to two approaches: the first is to interpret statistical data with prudence, and not to make the entire analysis depend on numerical indicators. Pursuit of quantification does not detract from the value of qualitative information, which is always useful. The second approach is to supply missing quantities and to improve existing data. That is the method developed here.

5. THE APPROACH

1. The document sets out to provide a general framework that can be adapted to any country. It provides concepts and a framework for analysis of economic and financial situations; it is based on the broader context of analysis of health sector resources (1). Yet it is not a handbook that can be used everywhere as it stands: actual situations vary greatly. The document should therefore be used at two levels: a relatively simple level at which a general diagnosis can be made, and a deeper level for detailed examination of various questions. Before considering a detailed examination of one question, for example, it is better to have made a general diagnosis at the first level. This simpler level allows us to identify and prioritize the questions to be tackled at a later stage.

2. The document does not give ready-made solutions to all the questions, including that of finance, with which those in charge of essential drugs policies are confronted. This is basically because the solutions must be adapted to the context of each country. The document should help with analysis of these problems, but it will not provide the answers.

3. The idea is to start with questions and end with indicators that can provide an answer. The aim is not to make a list of indicators of economic statistics for their own sake, but to prepare them with a view to solving specific problems. The economic and financial analysis to be made will depend on national contexts: not all problems are equally urgent, and statistics are not available in every case. In order to use these methods, priorities must be established in the light of the preliminary diagnosis.

6. LIMITATIONS

This document is relatively abstract: there is a lack of examples to illustrate the issues discussed. This is because economic and financial analysis of drugs is still at an early stage.

We do not have systematic economic data on drugs for all countries, especially for the poorest countries. The method proposed is yet to be tested in various categories of country to identify what can be most usefully analysed, to be more specific about the methods for gathering data, to define clearly the information that can be gathered in the national context, etc.

There are very many studies dealing with innovations in management and financing of drugs. Most of them have been done with little hindsight, in the interests more of promotion than of objective evaluation. There are very few comparative studies that try to identify, for each innovation, factors such as the role of the social and economic environment, the advantages and disadvantages of the solution analysed and the conditions under which it can be generally applied.

Setting out the limitations of this document highlights the need for research on a whole series of problems that are as yet unclear. In a sense, what the document offers are basic methods for future research and study.

1 E.P. Mach & B. Abel Smith. *Planning the Finances of the Health Sector: A Manual for Developing Countries*. Geneva, WHO, 1983.

PART 1

TOOLS FOR DIAGNOSIS OF THE NATIONAL DRUG ECONOMICS SITUATION

Part 1 sets out to identify the economic indicators that are needed for evaluation of the economic aspects of drugs in a given country, at a given moment.

The first chapter will review the indicators relevant to overall diagnosis of the economic and health situation. These indicators are not actually part of the pharmaceutical situation, but form its immediate context. This is why we turn to them first.

The second chapter examines a number of the main questions in turn, specifying their components. The relevant economic indicators of each component will be examined, and the desirable level of each indicator will be stated where possible.

These indicators will then be presented in a **system of economic information on drugs**, including the **national drug accounts** (Chapter 3) and **associated indicators** (Chapter 4). These national accounts constitute a coherent framework for gathering and processing of economic information. They are a handy tool in that they present economic information on drugs systematically and logically, allowing us to check the mutual coherence of the indicators. Chapter 5 deals with data gathering.

CHAPTER 1

THE OVERALL SITUATION OF HEALTH AND THE ECONOMY

We need consider only those features of the situation that are of use in diagnosis of drug economics and finance.

Section 1: The national economic situation

The essential matters are the level of income of the country concerned, its development, and its distribution (who controls the wealth?). With the exception of international aid, drug consumption is an expenditure of national income. Even if this expenditure can be considered an investment in human resources that fosters development in the long term, one must begin by making the expenditure.

The essential indicator is per capita gross national product (GNP), an approximate but useful indicator of the level of economic wealth of a country. Measuring its development (growth rate over 10 years) shows whether the country is becoming richer, stagnating or getting poorer. Division of gross national product into agricultural production, industrial production and the tertiary sector gives an idea of the nature of the economy (agricultural, industrial, etc.). The distribution of exports and imports by product category helps us understand what the international economic situation is based on, and the relationship between imports and gross national product indicates the extent to which the national economy is integrated with the world economy. Distribution of international commerce according to country shows interdependencies between other countries.

The public finance deficit (expressed as a percentage of GNP), the burden of foreign debt servicing (expressed as a percentage of export earnings) and the inflation rate are good indicators of national economic difficulties.

State spending on education, health and defence in percentage terms shows the priority accorded to social matters by the political authorities. Literacy rates for adult men and women indicate the level of education of the population.

Finally, the distribution of the population in town and country gives some indication of ways of life, minimum wage-levels and unemployment levels. The exchange rate and its changes over time allow us to make international comparisons.

These data are generally available in the countries concerned. International bodies, such as the World Bank, publish these basic economic data.

With the economic crisis, many developing countries witnessed a growth in their so-called "informal" sector, which is outside state registration, control and regulation. That sector can account for up to 50% of the production and distribution of goods, services and income. Its links with the so-called "formal" sector are often complex, and can involve, for example, exchanges of goods between the two sectors. Drugs are often involved in the informal sector. Wherever possible, information - even partial - must be obtained on this sector, since it is of great importance.

Indicators of the economic situation

Per capita Gross national product (GNP)
Average growth rate of GNP over 10 years
Breakdown of GNP into agricultural, industrial and tertiary sectors
Principal exports (percentage of total exports)
Principal imports (percentage of total imports)
Exports/GNP (%)
Imports/GNP (%)
Principal countries to which goods are exported and from which goods are imported (percentage)
State budgetary deficit as a percentage of GNP
Debt-servicing (as a percentage of exports)
Inflation rate (annual growth of consumer prices)
Proportion (percentage) of state budget allocated to education, health, defence
Adult literacy rates (men, women)
Proportion of population in urban areas
Minimum legal wage
Proportion of adult population unemployed and looking for work (ILO definition of unemployment)
Exchange rate: number of units of local currency to the dollar. Changes over 10 years)

Section 2: The overall health situation

This is where we consider the main data from health statistics.

1. The health system

A brief description of the health system enables us to identify the prescribers of drugs:

General organization of the health system: public sector, semi-public sector, private sector, health programmes. Existence of a health plan.

Infrastructures: number of hospitals (by category), number of health centres, dispensaries, medical surgeries, ... Average number of inhabitants served (regional disparities).

Health personnel: numbers of health workers of the principal categories: physicians, nurses, pharmacists. Average number of inhabitants per professional in each category of health worker. Proportion working in the public sector and proportion working in the private sector; where appropriate, proportion working in both.

2. The health of the population

This does not concern gathering data to evaluate drug requirements, but is a matter of getting the measure and the nature of the problems.

The essential health statistics are:

Infant mortality, child mortality for (children under five), maternal mortality, life expectancy at birth, percentage of children underweight at birth.

Principal causes of morbidity (principal reasons for consultation), principal causes of death.

3. Utilization of health services:

What access do the people have to health services?

- average number of contacts per inhabitant with the health system (consultations or hospital admissions);
- percentage of completely vaccinated children;
- percentage of assisted deliveries.

Indicators of the health situation

General organization of the health service;
Number of hospitals, health centres, dispensaries, medical surgeries;
Population served by hospital or dispensary, by region;
Number of physicians, nurses, pharmacists;
Number of inhabitants per doctor, nurse, pharmacist, by region;
Proportion of physicians, nurses, pharmacists working in the public sector, in the private sector, in both;
Infant mortality (children up to one year of age);
Child mortality (children between one and five years of age);
Maternal mortality;
Life expectancy at birth;
Percentage of children underweight at birth
Principal causes of death;
Principal causes of mortality;
Average number of contacts per inhabitant per year (consultations and hospital admissions);
Percentage of completely vaccinated children;
Percentage of assisted deliveries.

CHAPTER 2

THE ECONOMIC SITUATION REGARDING DRUGS: FROM QUESTIONS TO INDICATORS

The key question is how much the country spends on drugs. It is not enough to know the sum involved: we must also know which economic agents spend the money, what categories of population benefit, and whether the level of expenditure is excessive: can wastage be reduced? In addition to these key questions on expenditure, there is the matter of the economic environment of drugs: to what extent does the country depend on imports, and who are the economic agents in the pharmaceutical system?

Such questions can clearly be transformed into indicators. The matter of economic indicators is dealt with in Chapter 3, which covers economic accounts, and in Chapter 4, on associated indicators.

Section 1: How much does the country spend on drugs?

1. The notion of national expenditure on drugs

What do we mean by a country's expenditure on drugs? There are three different answers: expenditure on imports, state expenditure, and expenditure on national consumption.

Expenditure on imports accounts for a high proportion (sometimes over 80%) of total consumption in countries without a large pharmaceutical industry. Many countries, particularly in Latin America and Asia, import less than 20% of the drugs they consume. However, imports of raw materials, especially of active ingredients, can amount to a considerable proportion, e.g., 25% of the value of drugs produced, and should therefore be added to the import bill. Furthermore, fees for the production of patented products can take up a lot of foreign currency. The drug imports heading indicates the foreign currency cost of drugs for the country and its dependence on foreign countries in drug consumption: where dependence is heavy, an increase in expenditure does not create wealth in a country, as it would do if the drugs were produced locally. The cost of imports is only significant for countries with foreign currency problems. Drug imports should be compared to total exports, which bring in the money to pay for them.

State expenditure on drugs is payment for drugs from the budget of the ministry of health and from other ministries, such as defence, labour, social welfare or education. Calculation of this expenditure enables us to answer the question "What does the state pay for?", but not the question "What does the country spend on drugs?", since the state is not the only purchaser of drugs.

Expenditure on national consumption is the total amount of money spent on consumption of drugs in the country, irrespective of who pays, and of whether the purchasers are public or private, nationals or foreigners. This expenditure includes not only the purchase of drugs from pharmaceutical companies but also distribution costs: the profits of commercial distributors, salaries of staff and running costs of non-commercial supply services. Such is the total national expenditure on drug consumption. This expenditure can be calculated as an average figure per inhabitant or related to national consumption (total value of goods and services consumed in the country), or more simply related to gross national product.

2. Absolute and relative levels of expenditure

The absolute level of expenditure per inhabitant varies from country to country between 1 and 300 (US$1-300 per inhabitant per annum), which is an enormous range. This absolute level gives an indication of the level of drug supply to the population and the kind of policy being pursued. Satisfaction of needs is another matter, which depends on how fairly the drugs purchased are distributed, and how much of the expenditure is wasted. Consider a set of five orders of magnitude:

- expenditure of less than $5 per inhabitant per annum is unlikely to give the entire population of the country a regular supply of drugs. The figure of $5 is a national average. Part of the population therefore has less than $5;

- with expenditure of $5-10 per inhabitant, it is possible to supply a large part of the population with essential drugs. Average expenditure on drugs in developing countries in 1985 was $5.4; (1)

- with expenditure of $ 10-50 per inhabitant, there is ample scope for satisfying the drug needs of the entire population;

- in excess of $50 per inhabitant per annum, consumption may be regarded as partly wasted.

- in excess of $100 or $150, which is the case in certain developed countries, we are probably dealing with massive over-consumption. This does not mean that no part of the population has very restricted access to drugs. In 1985, average consumption per inhabitant in developed countries was $62.2; (1)

Expenditure can also be compared to the country's income in terms of GNP. Drug expenditure represents a few per cent of GNP: the countries with the lowest per capita GNP tend to spend a little less ($1 per inhabitant for a per capita GNP of $100 - 200, which amounts to less than 1%), while the wealthiest countries spend a slightly higher proportion of GNP

1 WHO, *The World Drug Situation*, op. cit.

($250 per inhabitant for a per capita GNP of $10 000, which amounts to 2.5%). In countries with similar incomes, those with a larger health service (for example having a larger number of prescribing physicians) will spend more.

Drug expenditure can also be set in relation to health expenditure, whether for the country as a whole, or for expenditure made by the state, or for household expenditure. The proportion of drug costs in health expenditure varies very much from one country to another. That proportion depends on the one hand on the propensity to prescribe and consume drugs in the country, and on the other hand on the cost of drugs in relation to the income of health professionals: the proportion will be much higher in a country where drugs are dear and health professionals ill paid, than in a country where drugs are cheap and the same professionals are well paid. Changes in this proportion within a country are influenced by changes in price and changes in quantities. A simple method for measuring changes in drug prices is presented on page 21.

Section 2: Who pays?

1. How much is paid by the state, consumers, foreign aid?

To find out who pays we need to prepare a financial account (see below). This information forms the basis of any search for new sources of funding.

The amount of expenditure on drugs financed by the state can depend to a great extent on the situation of the budget. This is because when the state has to compress expenditure to reduce its deficit, it is easier to reduce expenditure on supplies (purchase of goods) than expenditure on staff (which involves making civil servants redundant or reducing their salaries). State expenditure on drugs can fluctuate considerably from year to year.

The proportion of the state budget allocated to expenditure on drugs is often between 1 and 2%. It is also worth calculating the proportion of the ministry of health budget used for the purchase of drugs. Does it cover the treatment of hospital cases?

Consumer spending on drugs, too, depends on financial possibilities, although, in this case, annual fluctuation is less extreme than in the case of state-financed spending. Calculation of the national average is usually inadequate for evaluation of the value of this expenditure, because of differences in the income of the population: if its income drops, the better-off part of the population is ready to sacrifice other expenditure in favour of expenditure on drugs, while the poorer people have to cut back, sometimes heavily, on drug spending in order to continue to buy food; they may even have to stop buying drugs altogether if they lose their monetary income. This is why behaviour can vary considerably from one social category to another and from one region of a country to another. Little is known about such behaviour patterns.

A very simple indicator is comparison of consumer spending on drugs with consumer income. No standard can be put forward here, although another indicator could be compared to it: average value of drugs prescribed and annual monetary income. The higher the value,

the less the prescriptions are followed and the less the population consults prescribing authorities. In some cases, the ratio can exceed 10%.

In some countries, family or other kinds of solidarity networks are used for medical expenses (1). People who do not have the wherewithal to buy the drugs they are prescribed ask their relatives and friends for financial help. The importance of these networks is not understood: Do they involve the wealthier helping the poor? Or people of the same level of income helping each other? Or both? Without going into these solidarity networks in great depth, one can assess fairly simply what proportion of spending on drugs draws on such solidarity.

2. Who pays for whom?

The various sources of finance for drugs do not contribute to a single budget for all consumers. Consumers pay for themselves, their families, perhaps their friends, while social security pays for its beneficiaries, and the health department of a company pays for its employees and their families. The financial point of view is not the same as the consumer point of view. For a given country, the actual difference between these two points of view must be understood: which categories of the population benefit most from collective finance, and which benefit least.

3. How are payments made and allocated?

The terms of payment affect both how much is paid and how the supply and distribution of drugs is managed.

Social security systems in which providers of services are entitled to free drugs or to reimbursement find it difficult to control the extent of their subsidy, since the amount of expenditure made is dictated by the prescribers. Expenditure is controlled indirectly through rules for the running of the social security system. If, however, the state itself buys the drugs and distributes them to the health services, it is quite free to decide how much to spend. In systems where the state allocates a budget to health services which are themselves to purchase the drugs, it does not have control over the amount spent on drugs or other items, since it controls only the level of subsidy and not its use.

Do the consumers buy their drugs from dispensaries or from health facilities, or do they receive drugs when they pay for their treatment? Is it in the interest of health facilities to prescribe large quantities of drugs?

Section 3: Does the entire population have equal access to drugs?

In order to know if consumption is equitable, we must know the disparity between categories of population. Who consumes drugs in the country? Who does not or takes them irregularly? There are questions of practical accessibility (availability and proximity of supplies) and economic accessibility: do the prices charged for drugs and prescriptions allow patients to obtain effective treatment?

1 ENDA-Tiers-Monde, *Prescripteurs et Utilisateurs de Médicaments et Plantes médicinales*, Preliminary Report (Dakar, ENDA-Tiers-Monde, 1990), 155 pp. plus annexes.

1. What are the social differences in drug consumption?

There are always social differences in drug consumption, but are they acceptable or must they be reduced? In some countries where differences are slight, the ratio between social strata with lowest consumption and strata with highest consumption is between 1:1.5 and 1:2. However, in countries where a large sector of the population has no access at all to drugs, the ratio is infinite.

First question:

Which part of the population has no access at all to drugs (no consumption over a year)? The question must be answered in terms of social groups rather than in terms of individuals, since it is normal for individuals in good health to consume no drugs.

Second question:

In the social groups that do consume, what are the average consumption rates in different parts of the population? There are methodological problems in replying to this question: how do we define social groups and how do we measure consumption? Social groups are the social categories or classes which are distinguished by income, way of life and place in society. These social categories are not always easy to identify; incomes, for example, might not be well known. A geographical criterion could be used: social differences from one region to another could be examined (since it is known which regions are poor and which are rich), or according to urban and rural areas, or within cities, according to district. Such criteria do not make for very precise analysis, since social differences can be very great within a geographical area, and inhabitants of one area can buy their drugs in another (country-dwellers, for example, might go to town to buy drugs). Since this geographical criterion is easier to use than purely social criteria, it is often worth using it in place of a social criterion in the gathering and analysis of data: field surveys with purely geographical sampling or, if total drug consumption for a geographical area is known, average consumption per inhabitant can be calculated.

2. How do these differences in consumption come about?

Are the differences attributable to lack of prescribers and health infrastructures, to drugs being out of stock in certain pharmacies, to purely economic circumstances (drugs being too dear for the poorest people), or to cultural considerations (people preferring traditional medicine to modern medicine)? All these factors might be linked in such a way that it is difficult to extricate those responsible for low consumption. For the population to have true access to drugs, and in so far as they are physically available, drugs must be priced accessibly and must be wanted by the population. These three groups of factors are therefore to be analysed in turn. High levels of drug consumption, on the other hand, might derive from a high level of self-prescription, due to the relatively high cost of medical care.

First of all, what are the physical obstacles to obtaining drugs? What proportion of the population is not served by a pharmacy? Indicator: percentage of population living more than 5 km from a pharmacy. To what extent do shortages affect the health of the population (for example, absence of insulin leading to the death of diabetics)? Do shortages occur in vital drugs? This is more difficult to measure precisely for an entire country. A number of representative pharmacies could be selected (10 or 50) in order to count the number of days in the year on which the most essential (10 or 50) drugs were not available. This provides

an indicator of the average number of days on which essential drugs are not available. If shortages are not massive, more data is needed on a larger number of pharmacies and drugs. This does call for more data-gathering, but if shortages are less acute, then it is likely that the supply system is better managed and therefore able to supply these statistics. Shortages cannot be remedied without precise knowledge of the situation.

Analysis of the economic obstacles starts from the previous question (who pays?): what proportion of the income of the poorest people is represented by the value of prescribed drugs? This analysis makes sense only if physical accessibility is not the basic problem.

Finally, analysis of cultural causes is a matter for anthropologists or sociologists, and will not be examined here.

Section 4: Are there potential savings to be made?

There are ways of reducing expenditure on drugs without reducing effectiveness: an effort must be made to reduce economic wastage. Perhaps the national pharmaceutical system can make a better choice of drugs, buying less expensive ones; perhaps the procurement and distribution system is too costly. It is not simply a matter of taking account of loss of drugs, or of their unit cost, but also the total cost of treatment (1). The potential for a reduction of expenditure under these headings can be considerable. Setting aside the ease with which such reduction of wastage can be effected, we shall consider only evaluation of the extent of the reduction.

Potential Savings (2)

1. Selection using cost effectiveness criteria
2. Orders based on quantification of needs
3. Procurement:
   (a) Using nonproprietary names
   (b) Putting orders out to tender
   (c) Using low-price suppliers
4. Storage and distribution:
   (a) Appropriate storage
   (b) Good stock management
   (c) Reduction of theft and misappropriation
5. Rational prescription
6. Improvement of compliance

1 WHO, *The Use of Essential Drugs*, op. cit.

2 WHO, *Financing Essential Drugs*: Report of a Workshop, Harare, Zimbabwe, 14-18 March 1988. Geneva, Action Programme on Essential Drugs and Vaccines, WHO/DAP/88.10.

Measurement of these potential savings does not mean that they are all fully possible. It gives an idea of possible room for manoeuvre and of the items on which the greatest savings could be made.

1. Drug selection

At national level, this selection is to be made in accordance with public health criteria: drugs should suit the health requirements of the country and the state of the health care system. They should be safe, of proven effectiveness and guaranteed quality. These criteria also make for economic efficiency: it makes more economic sense to buy drugs that meet these criteria than drugs whose therapeutic properties are of dubious relevance in the national context. There are indicators for these qualities, and for the procedures designed to promote them: examples are the number of drugs submitted to quality control, the number of drugs authorized in the country that are banned in certain reference countries, and the existence and application of treatment schedules.

A simple indicator is the number of drugs: the number of different drugs authorized in the country, the number of drugs actually distributed, and the number of drugs distributed to dispensaries, hospitals and the very smallest health facilities. Up to a point, or as long as the drugs selected really are essential, a low number of drugs indicates a rigorous selection. In any case, a large number of drugs is not a good sign. A small selection of drugs enables economic costs to be reduced: purchases can be made in larger quantities and management costs are lower. The bigger the market, the bigger the reductions that can be made in this way; the size of the country is therefore relevant.

The reference indicators are 1500 drugs in commercial pharmacies, 400-500 in major hospitals, 200 in ordinary hospitals and 40 in small facilities not run by physicians (1). These are, of course, orders of magnitude and not absolute numbers to be slavishly followed.

2. Quantification of needs

Poor quantification of needs can lead to overbuying of drugs, which are not consumed and go out of date. The value of expired or deteriorated stocks of excess drugs equals the saving that could be made if drugs were quantified better. What is the value of wasted expenditure on drugs in a year?

3. Procurement costs

There are three aspects to measurement of the performance of a drug pricing system: evaluation of the purchasing procedures, measurement of price levels and measurement of the impact of terms of payment and types of presentation.

Evaluation of purchasing procedures is a matter of measuring the proportion of purchases made by putting an order out to tender using international nonproprietary names. This is relatively easy to measure. The higher the indicator, the lower the price of purchases made by the country - although this is not always the case: whereas in theory putting orders out

1 T. Tigretti, *Les 40 Médicaments du District, Manuel des Prescripteurs*, Genève, Institut Universitaire d'Etudes du Développement, 1987.

to tender using generic names leads to lower prices, in practice this does not always happen as offers are sometimes submitted for brand names; also good negotiators can obtain low prices. The best way therefore is to compare the purchase prices of drugs. Such comparisons must be carefully made, since monetary variations can be enormous.

There is a simple and useful way of comparing the purchase price of drugs: take the 100 (or in small countries 50) most widely used drugs and calculate the unit cost, for example of a 100 mg tablet, or a bottle of 1 M units. Compare these prices to reference prices. The reference prices might be those of a "reference" country, or the prices charged by UNIPAC, which are very low. This does not mean that those prices can be obtained by all buyers but they do have a definite meaning. The prices can be compared drug by drug (for the 100 most widely used) to see which drugs show the greatest discrepancies. Alternatively, the overall discrepancy can be measured; for this there are two methods: the simpler is to calculate the average difference for all the drugs on the list; another is to weight the relative price difference of each drug in accordance with the popularity of the drug. The more money that is spent on a given drug, the more its difference in price from the reference price will influence the weighted average. This method allows us to establish how much money would be saved by purchasing with the reference price system rather than with the currently used system, or to see how much would be gained by obtaining lower prices. (see box on p. 21)

This method also enables us to follow progress from year to year by comparing weighted price differences for succeeding years.

For a good comparison of drug prices, the conditions of payment (the time lapse between delivery and payment of the supplier) and packaging (for dispensary or pharmacy) must be similar or even identical. In a preliminary survey, one can ignore these elements, which are used to justify "normal" price differences.

In a more detailed approach, conditions of payment and packaging must be taken into account. A comparison of prices under identical conditions of payment and packaging can be made. Alternatively, it can be inferred that price differences between drug supply systems offering different conditions for payment and packaging indicate the value of the services "conditions of payment" "packaging". The next question is then whether or not the price of these services is excessive. For example, it will be possible to measure the value of reduction of loss of drugs resulting from the use of smaller packages, or the value of credit obtained by delayed payment. Many examples indicate that it is often better for pharmaceutical procurement systems to have their own credit scheme and to make their own arrangements for packaging of drugs bought in bulk.

4. Storage and distribution costs

The real cost of the drug is not the wholesale price or the price paid by commercial pharmacies or public bodies, because distribution costs must also be included. It is not always easy to measure these costs, which may turn out to be as high as they are difficult to ascertain.

The easiest costs to measure are the compulsory trade margins: in some countries wholesalers and commercial pharmacies must take a percentage that is laid down by law. Yet these rates are not always respected, and it can be difficult to measure the rates that are really used (or the real sale prices of drugs). Furthermore, the distribution costs incurred by public

A Simple Method for Comparing Drug Prices

Method for comparing the price differences between two drugs.
This can be applied to 50 or even more drugs.

1. Simple arithmetical average difference

	Price of 500 mg tablet		Relative difference
	Country X or Year T (1)	Country Y Year T+1 (2)	(3) = $\frac{\text{Price (2) - Price (1)}}{\text{Price (1)}}$
Drug A	0.15	0.87	480%
Drug B	0.40	0.64	60%
Arithmetical mean:		$\frac{480 + 60}{2}$ =	270%

2. Weighted average

	(3) Relative difference	(4) Value of purchases in (1)	(5) Weighting	(6)=(3) x (5) Weighted difference
Drug A	4.8	1 000	0.091	43.68%
Drug B	0.6	10 000	0.909	54.54%
Total		11 000	1	98.22%

The arithmetical mean is 270%, whereas the weighted mean is 98.22%. This is because the drug with the smaller price difference (B) is weighted by a factor of 10. The weighted average method is more precise, but it calls for a knowledge of how much is spent on each drug.

bodies are not always known, since their costs are not always met by sales. Such costs must therefore be ascertained. They include the running costs of the services (salaries, various supplies), capital depreciation on equipment, and also losses, thefts and expiry of drugs, whether or not those drugs are actually destroyed. The non-distribution of these drugs represents a cost that should be attributed to inefficient operation of the distribution system.

Distribution costs are to be related to the purchase price of drugs, not to the sale price, because drugs may be given away or sold at a loss! It is difficult to suggest reference ratios in this area, since it must be ensured that the trade margin covers a comparable distribution service (wholesale or retail distribution, transport included or not, etc.). Furthermore, the distribution cost/purchase price ratio is obviously higher when the purchase prices are low. Nevertheless, trade margins (wholesale and retail stages) of 30% can be reached, and are reached in certain countries when the purchase prices are not too low. The average ratio can exceed 100% in public systems for distribution of drugs purchased at very low prices. The range is therefore considerable.

Distribution costs cannot be known unless distribution is tightly run. Where those costs are not known, the distribution is inefficient and entails considerable wastage. That in itself is an indicator. In any case, to reduce distribution costs, a distribution system where those costs can be measured is needed.

5. Prescription and compliance

The quality of prescription and compliance are great problems which are very difficult to evaluate systematically at national level. Rational use of drugs (choices made by prescribers and consumers) can also be an important means of reducing expenditure. Evaluation of the rationality is more complex.

A simple approach is to assess the number of different drugs prescribed to individuals, using survey methods. The indicator will be either the average number of drugs prescribed or the proportion of prescriptions in which the number of drugs exceeds a certain preselected norm, such as 3. The average number of drugs prescribed per prescription is around 2 in Switzerland, 3 in Tunisia and Kenya, 5 in Cameroon and 9 in south Brazil (1). It can be assumed that the greater the number of drugs prescribed, the less likely it is that all are medically useful.

These are rough and ready indicators that give an idea of the nature and extent of wastage involved in the selection of drugs. They do not provide an accurate diagnosis as a guide to action. That calls for more precise analysis of selected drugs, the dearest or the most widely used, or analysis of certain therapeutic categories, to ascertain what proportion is improperly or uselessly consumed (2).

The existence of national treatment schedules can help with the rationalization of drug consumption. There are two indicators of their impact: percentage of causes of morbidity that would feature in a treatment schedule, and percentage of patients successfully treated with treatment schedules.

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1 WHO, *The Rational Use of Drugs*: Report of the Conference of Experts, Nairobi, 25-29 November 1985 (Geneva, 1987), p. 198.

2 *Managing Drug Supply*, op. cit.

Section 5: How autonomous is the country's drug supply?

At this stage we are interested in the extent of dependence. In part 2, chapter 1 we will consider how it could be reduced.

Are drugs imported or produced in the country? Is national production carried out by national or foreign-funded companies? One might assume that the more a country imports and the more national production is made by foreign firms, the more the country is dependent. But apparent autonomy (consumption based on national production by national companies) can lead to greater constraints in the selection of drugs and choice of suppliers. Internal pressure can be stronger than external pressure. There is no measurable indicator of these strictures, which must be evaluated in qualitative terms. Similarly, countries that are heavily dependent on foreign finance for their drug consumption do not have great autonomy in their pharmaceutical policy, for example when it comes to choosing drugs.

To what extent can a country negotiate its imports? This is measured on the basis of the total value of imports and the value of imports made by large importers or consortia of importers. For example, a consortium of importers in a country increases the negotiating strength of the country. Conversely, financial difficulties, such as delays in payment or heavy debt with suppliers, reduce a country's negotiating capacity, perhaps by reducing the freedom to choose suppliers. What can be done to increase negotiating capacity? Such capacity is not decided once and for all. Once it has been evaluated, it is possible to ask if it is being effectively exercised.

Section 6: Who are the main economic operators in the national pharmaceutical system?

Who are the main economic operators in the national pharmaceutical system? How many wholesalers, dispensers, pharmacists are there? What is the role of the state in this system?

The role of the state should be assessed from two points of view: as an economic operator and as a public regulatory body. The state takes a hand in procurement and distribution of drugs and even in production, whether through the public services or through nationalized or partly nationalized companies. What part does it play in these different areas? How important are the other economic operators, especially large private companies at home and abroad? What are the market shares of the principal economic operators (the state, big business, etc.) in the different areas (production, supply distribution)?

The regulatory function of the state is shown by the existence of pharmaceutical regulations: how developed are these regulations? Are they applied? What means does the state have to enforce them? Are there professional organizations of pharmacists or pharmacy? What role do they play in development and operation of drug policies? Once again, no numerical indicators can be given, and evaluation will be qualitative.

CHAPTER 3:

THE NATIONAL DRUG ACCOUNTS

The national accounts are interrelated accounts that enable us to describe the economic movements of drugs within a country. The concepts and methods used are similar to those used in national economic accounting and in national health accounts.

The indicators associated with these accounts shed further light on the situation. They refer to variables that are not economic transactions. Their internal coherence is not as strong as that of national drug accounts.

The procedure described here is a general method that should be adapted to each country, especially as regards the nomenclature used. The accounts shown here are of an "average" degree of complexity. More simple and more complex accounts are possible.

We shall consider in turn the objectives, the concepts and the accounts.

Section 1: Objectives: what can national drug accounts be used for?

National accounts, especially those regarding drugs, afford an overview of economic transactions regarding drugs within a country. Where do the drugs come from and where do they go? What is the relative importance of the different circuits? How much does the country spend on drugs? Who pays? What proportion of income is spent?

The methodology of national accounts makes for coherent replies to all these questions. It also allows for missing data to be obtained from existing data by addition or subtraction. Thus in some cases the accounts enable us to evaluate the illegal transactions, if they are extensive and if accounts are sufficiently precise.

Accounts, along with indicators, are used in diagnosis of the drug situation, selection of priorities for the policy to be followed, and monitoring of the effects of that policy once it has been put into practice. They are the instrument panel of the national drug economy.

Yet these accounts do not give indications of the effectiveness of the pharmaceutical system: they deal only with the costs.

Section 2: Concepts and definitions

Once we have defined the field of the accounts (what we mean by drug from the economic point of view), we define the economic operators and economic operations. The economic operators are those with decision-making and executive power to do with drugs. Operations are economic actions related either to economic goods (meaning the drugs in this instance) or to money (financial operations).

1. The field of national accounts: definition of drugs

Every country has a legal definition of drugs, and it is that which should be used. From the economic point of view, the usual nomenclatures do not always correspond with that definition. Let us consider the problems this raises.

Human drugs and *veterinary drugs*.
The distinction must be made, and we should deal only with human drugs.

Drugs and *vaccines*.
Some economic nomenclatures distinguish drugs from vaccines. Vaccines are a category of drugs: they can be treated separately, as one can treat essential drugs or antibiotics as separate categories. Nevertheless, unless there are indications to the contrary, vaccines are to be regarded as drugs.

Modern drugs and *traditional drugs*.
From the economic point of view there is no general rule to be laid down. International statistics generally deal with modern drugs. There is no theoretical objection to keeping accounts on traditional drugs, but in practice it is difficult since there are no basic data. For practical reasons, such drugs are often ignored. Obviously in countries that are developing a traditional drug policy, it would be interesting to start economic accounts.

Drugs and *other pharmaceuticals*.
Pharmaceutical systems distribute many other products in addition to drugs: dressings, minor surgical supplies, syringes, needles, probes, etc., as well as laboratory reagents and products less directly related to treatment, such as toothpaste, diet foods, etc. These products are not drugs. The problem is that in basic statistics they are often included with drugs under the heading "pharmaceutical products". The correct procedure is to try to isolate the pharmaceutical products that are not drugs and exclude them from the accounts.

2. Operations on goods

Drug production :
This is an industrial activity whose end-product is a consumer drug. It may involve manufacture of the active ingredients, preparation of the drugs and packaging. If the drugs are not packed in the place of manufacture, then packaging should not be

included with manufacturing since it is closely related to distribution. Drugs may be manufactured by industrial companies, or by commercial pharmacies or hospital pharmacies equipped for making simple drugs.

Importation of drugs:
Transportation of drugs from a foreign country or territory.

Procurement :
Acquisition of drugs by the health system either from national industry or by importation.

Distribution (wholesale):
Acquisition, storage and supplying of drugs to economic operators who retail them to consumers.

Consumption :
Consumption acquisition of drugs by consumers. From the economic point of view, it does not matter whether the drug is actually consumed, whether it is consumed by the person who bought it or by another (such as a child of the consumer).

Purchase :
Purchase acquisition of drugs in exchange for money.

Transfer :
Acquisition of drugs involving neither payment nor theft. The drug is free of charge to the recipient. Free samples are not counted since they amount to a relatively small quantity. Were this not the case, they would obviously have to be included in the accounts under transfer.

Payment :
This may be either direct or indirect. Direct payment is exchange of money for drugs. In indirect payment the consumer pays for a service that includes supply of drugs - in charges for hospital treatment, for example.

3. Financial operations

Finance : transfer of money, payment. This is the funding of consumption and not of stocks and their consolidation, nor does it include the working capital of the national pharmaceutical system, which is another matter. Total financing of drug expenditure equals total drug consumption. The difference between the two notions is simply a matter of viewpoint.

4. Operators

The economic operators involved in drugs are defined by their function. The operators who discharge several functions are usually separated into as many operators as functions. For example, a private hospital which imports, manufactures and sells drugs to commercial pharmacies as well as dispensing them to patients, will be divided into those functions. This must be done in cases where the combination of functions is both rare and large scale; on

the other hand, if all hospitals in a country discharge these functions, there is no point in dividing all the hospitals into so many operators, and similarly if a few commercial pharmacies manufacture some drugs on a small scale, it is not necessary to take that into account.

Public operators who are directly under the authority of the state may be distinguished from private operators. We have not made this distinction in order to keep the accounts simple. It should, however, be kept in mind in answering the question: what part does the state play in the pharmaceutical system?

4.1 Consumers

It is the people, "households" in the national accounting sense, that acquire drugs, by purchase or by transfer. In national accounting, no sub-categories are identified. The distinctions that can be made will be examined below, along with the indicators.

4.2 Retail distributors

Categories vary from one country to another. However, in all countries there are:

The health services:
whose function is curative or preventive. Drugs are not their main purpose. These are hospitals, commercial pharmacies, surgeries, public health services, etc. The typology can vary from country to country depending on the organization of the health system. For example, one might distinguish public sector from private, or hospital sector from the rest. Health services retail drugs, dispensing them to patients in hospital or outpatients, whether by sale or transfer or against payment for a service (consultation, admission to hospital, etc.).

Commercial pharmacies and stores sell drugs. We examine only their activity with regard to drugs, excluding other pharmaceutical products, analyses, parapharmacy (such as cosmetics), treatment of minor complaints, or in certain countries activities related to completely different goods (such as hardware).

4.3 Wholesale distributors

Categories vary from one country to another. By way of example, we cite pharmaceutical wholesalers and central pharmacies of health services.

Wholesalers are often importers as well. They buy and sell drugs: their activity is of a commercial nature. They sell for profit, mainly to commercial pharmacies, but sometimes also to health services.

Central pharmacies of health services distribute drugs to health services. They may be either public or private, and they may buy or receive them by transfer, sell or transfer them at no charge; all this depends on the country. Private central pharmacies (especially of NGOs) that buy and sell drugs can be regarded as wholesalers.

4.4 *Sources of funding*

The ***sources of funding*** are the economic operators who pay for the consumption of drugs. We are not interested in the ultimate source of the money, since money is in permanent circulation in the economy. Thus taxpayers fund the state, clients fund businesses, which pay employees, but we talk of the state financing the consumption of drugs (in appropriate cases) rather than saying that consumption is funded by taxpayers.

Consider by way of example the following list of operators who finance the consumption of drugs:

- the *state*,
- *local* (and regional) *administrations*,
- *insurance*, which can be divided into compulsory and voluntary insurance (mutual insurance for example) or into public and private insurance, etc.;
- *businesses*, who sometimes directly fund their employees' consumption of drugs; this may happen in countries where there is no compulsory insurance for the businesses concerned. Historically, this is often true of railways and mines, or of civil service administrations acting as employers;
- *national NGOs*, who are charitable institutions that collect money in the country;
- *foreign* sources of funding, which must be divided into public (bilateral - aid from one country, or multilateral - aid from several countries - such as WHO or UNICEF) and private aid (nongovernmental organizations);
- *households*, who are the consumers themselves.

In principle, health services do not fund the consumption of drugs, since consumption is always financed by one or more of the sources of funding set out above.

Section 3: Accounts

We have selected four headings: procurement, distribution, consumption and financing of consumption. The heading of drug production might also be added.

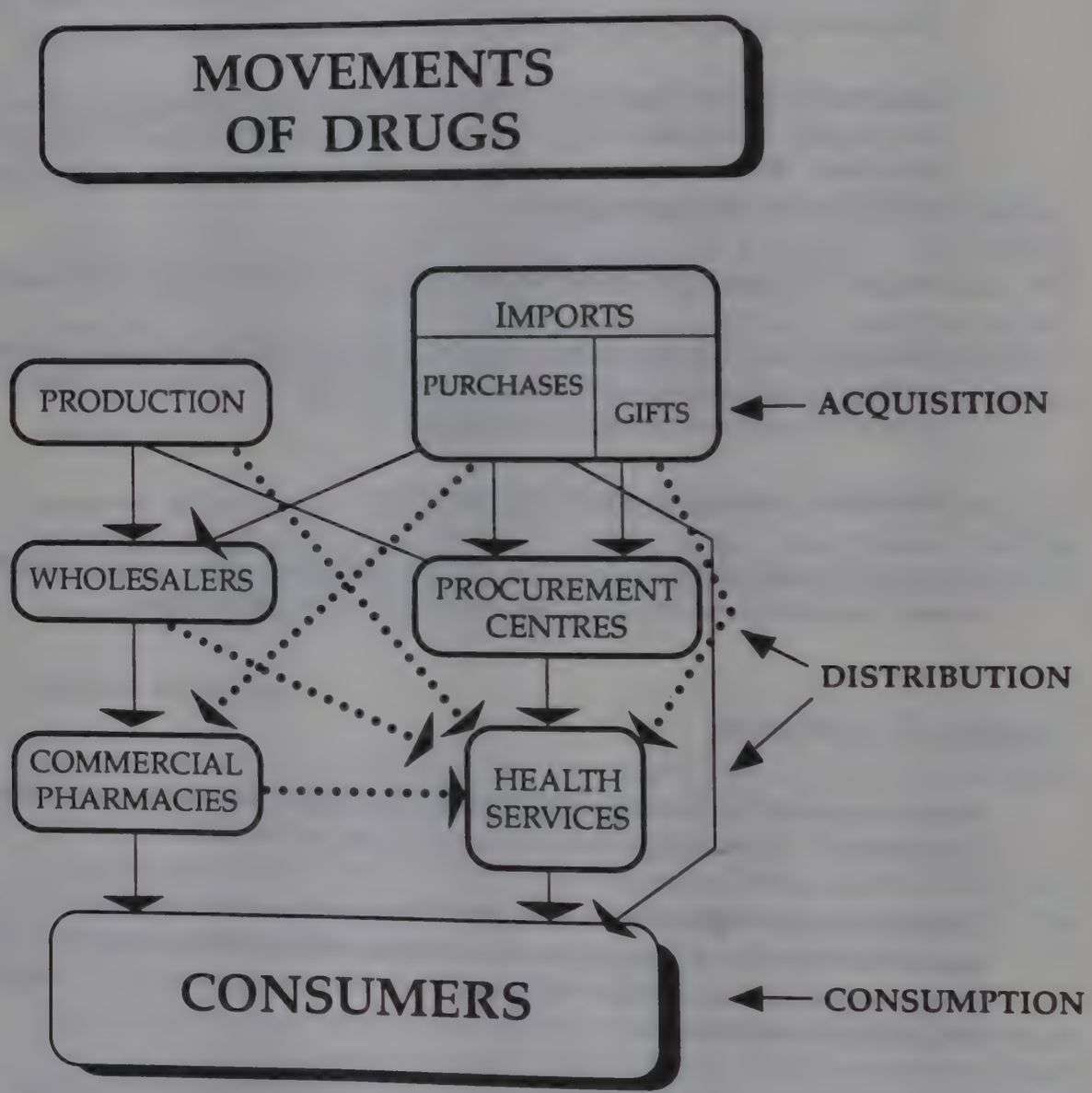
This presentation might be regarded as providing an average amount of detail. It is easy to prepare more detailed or more simple accounts by grouping headings. The presentation of the four accounts is made in four different tables. They can be presented in a single table, which follows the first four.

The detail of the headings chosen depends on the distribution of drugs in the country concerned. The accounts presented refer to an example where the circuit can be represented as in the diagram in Figure 1. This table should be adapted to reflect the actual organization of drug supply and financing in each country.

1. The procurement account

In Table 1 (p.31), sources of drugs are in rows and their destinations (the economic operators who acquire them) are in columns. In the example chosen, it is assumed that commercial pharmacies, health services and consumers buy part of their drug requirements directly from abroad. In the case of consumers, this purchase abroad is a matter of travellers bringing drugs back in their luggage.

The boxes to be filled in are shaded in the illustration. They have been chosen either for a logical reason (for example, consumers cannot buy direct from industry), or for a factual reason (in the illustration chosen, the movement exists).



NATIONAL DRUG PROCUREMENT

Source of drugs (origin and type of finance)	Economic operators supplying the system: Central pharmacies of health services	Wholesale importers	Commercial pharmacies (direct procurement)	Health services (direct procurement)	Consumers	Total interior market	Exports	Sum total
National production								
- National firms								
- Foreign firms								
Imports								
- Purchases								
- Public aid donations								
- NGO donations								
Sum total of procurement								
- Purchases								
- gifts								

2. The distribution account

The columns in Table 2 show the wholesale distributors. It is assumed that dispensaries sell drugs to the health services. This is their sole distribution function. The upper part of the table is for entries: procurements (bottom lines of Table 1), prices and distribution costs. The profit margins concern the commercial operators who sell at a profit, and the prices concern the non commercial operators who either can transfer at no charge or retail at cost price. They have distribution costs that must be noted. The lower part of the table refers to outgoing drugs. The value of the drugs distributed is not the same as that of the drugs received, because of costs and trade margins. Furthermore, the volume of drugs distributed is not the same as that of incoming drugs, since the level of stocks at the end of the year is rarely identical to that at the beginning of the year, and certain drugs have to be destroyed because they have expired, while others are stolen.

TABLE 2:

NATIONAL DRUG DISTRIBUTION

	Wholesale distributors (intermediaries)			
Operations	**Central pharmacies of health services**	**Wholesalers**	**Commercial pharmacies**	**Sum total**
Incoming				
- Drugs:				
o Gifts				
o Purchase				
- Costs and trade margin for distribution				
Outgoing				
- Total distributed:				
o Sales:				
to commercial pharmacies				
to health services				
o Transferts (gifts) to health services				
- Other outgoings:				
o Lost and destroyed				
o Changes in stock				

3. The consumption account

In Table 3 the retailers are entered in the columns. They include consumers, since they can import directly from abroad. As in the distribution account, the upper part deals with incoming and the lower part with outgoing resources. The table works in the same way.

In the upper part, lines designate drugs received by retail distributors, set out according to source of supply: wholesale distributors (central pharmacies and wholesalers) and direct imports. Transfer free of charge is distinguished from purchase).

The lower part shows retail distribution (consumption) and other outgoings (stock variations and destruction or loss). The drugs distributed are set out according to whether they were sold (direct payment), sold indirectly (sold with a health service), or transferred (free of charge), since these categories of acquisition mean something else in terms of finance.

TABLE 3:

NATIONAL DRUG CONSUMPTION

	Retail distribution			
Operations	**Commercial pharmacies**	**Health Services**	**Consumers**	**Sum total**
Incoming (from:)				
Direct imports				
Distribution				
Central pharmacies				
- Purchase				
- Transfers received				
Wholesalers (Purchases)				
Trade margins and costs				
Outgoing consumption				
- Transfer				
- Sales				
- Indirect sales				
Other outgoings				
- Stock fluctuation				
- Destroyed and lost				

by definition: incomings = outgoings

4. The finance account

The finance account (Table 4) shows the different sources of finance in rows and the recipients of finance in columns. Direct financing is the payment of consumers for the purchase of drugs; indirect financing is funding of the drug distributors. This distinction shows clearly the flow of funding in the drug circuit at a stage which is fairly close to final consumption. The table should be adapted to the national situation.

TABLE 4:

FINANCING CONSUMPTION

Origin of finance	Destination of finance					
	Central pharmacies of health services	Health services	Consumers			Total flow
			Direct purchases	Indirect purchases	Transfers and gifts	
1° Indirect finance						
State						
Local administrations						
Compulsory insurance						
Voluntary insurance						
Employers						
National NGOs						
Households						
Public foreign aid						
Foreign NGO						
2° Direct finance						
State						
Local administrations						
Compulsory insurance						
Voluntary insurance						
Employers						
National NGOs						
Households						
Public foreign aid						
Foreign NGOs						
Total finance received						

5. Summary of accounts

A whole range of indicators can be worked out from the accounts we have set out. A few of them are mentioned here by way of illustration.

Indicators calculated by comparing data from the accounts with other economic data:

- drug imports as a proportion of total imports or exports;
- drug consumption as a proportion of total national consumption;
- national funding of drug consumption as a proportion of GNP;
- drug consumption by source and by inhabitant or beneficiary.

Indicators calculated from information contained in the accounts; calculation of percentages in rows or columns:

- imported drugs as a proportion of national procurements;
- proportion of imports made by wholesale importers;
- drugs sold by central pharmacies as a proportion of all they distribute;
- proportion of drugs bought by health services from central pharmacies;
- drugs given to consumers as a proportion of total consumption;
- proportion of drugs acquired by consumers from health services;
- proportion of consumption financed by foreign aid, the state, households, etc.:
- the different sources of finance as a proportion of the financing of drugs given to consumers.

The four accounts can be presented in a summary table (Table 5) that describes the overall movement of drugs and finance. The rows in the upper part show where the drugs come from, and the rows in the lower part show where the finance comes from. Columns show recipients of drugs and finance. The total amount of drugs received, for example, commercial pharmacies (column total) equals the total quantity of drugs distributed by commercial pharmacies (row total), since margins and stock fluctuations are registered. This total should equal the finance received by commercial pharmacies.

TABLE 5:
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TOTAL DISTRIBUTION AND FINANCING OF DRUGS

Circulation by source	Recipients of drugs and finance									
	Central pharmacies of health services	Wholesalers importers	Commercial pharmacies	Health services	Consumers			Foreign	Stock fluctuation and loss	Total circulation
					Direct purchase	Indirect purchase	Transfer (gifts)			
1° **Drugs**										
Imports										
- purchase										
- public aid										
- NGO aid										
National production										
- national firms										
- foreign firms										
Central pharmacies										
- sales										
- transfers										
Importers and wholesalers										
Commercial pharmacies										
Health services										
Profit margin and distribution costs										
Total drugs received										
2° **Finance**										
State										
Local administrations										
Compulsory insurance										
voluntary insurance										
Employers										
National NGOs										
Households										
Public foreign aid										
Foreign NGOs										
Total finance received										

CHAPTER 4

ASSOCIATED INDICATORS

The data presented here support the national accounts. They are no less important, but they are less coherent than those accounts. They are relatively unsystematic indicators. The list provided shows the kind of indicators that can be obtained. In deciding which to calculate, one must take account of priorities and of the difficulty involved in doing so in the country concerned.

Those indicators pertain to economic operations described by the accounts: procurement, distribution, consumption and financing. They give a better understanding of the operations described by the national drug accounts. They deal with a variety of features from the following categories: economic operators, number of drugs, prices and costs, procedures, and population.

1. Procurement

Economic operators:
number of producers, importers and medical visitors. For producers and importers, the number of companies making up 20%, 50%, 80% of the production or total imports of the countries. Role of public bodies, commercial and other private organizations in production and importation.

Drugs:
number of authorized drugs, number of new drugs each year, number of drugs withdrawn each year. The same for active ingredients and the forms of drugs. Number of drugs representing 20%, 50% and 80% of production and of imports.

Prices and costs:
purchase price of drugs: changes from year to year, international comparison.

Procedures:
how much put out to tender, how many urgent purchases, how many ad hoc purchases. Terms of payment (average time allowed), quality control. Interval between decision to buy and delivery.

Population:
not applicable, since the population has little or nothing to do with acquisition.

2. Distribution

Economic operators:
total number of commercial pharmacies and health services supplied with drugs. Average turnover of commercial pharmacies, number of commercial pharmacies accounting for 20%, 50%, 80% of sales. Number of pharmacists and qualified pharmaceutical assistants.

Drugs:
total number of drugs distributed by each system (e.g. wholesalers, procurement centres, different categories of health service). Number of drugs accounting for 20%, 50%, 80% of sales in each distribution system. Data on shortages. Quantity of stocks. Existence of dead stock.

Prices and costs:
profit margin or ratio of distribution cost for each distribution system.

Procedures:
number of deliveries per annum.

Population:
number of inhabitants per health centre, per region, etc.

3. Consumption

Economic operators:
number of prescribers per category: physicians (general practitioners and specialists), non-physicians, etc.; number of care facilities: hospitals, health centre, etc.

Drugs:
number of drugs per prescription, for each type of prescriber; proportion of prescriptions with 1, 2, 3, 4 or more different drugs.

Prices and costs:
average cost of a prescription, threshold value of prescriptions categorized according to their cost for the 20%, 50%, 80% cheapest. Average cost of drugs for a hospital case. Average annual value of prescriptions for each category of prescriber.

Procedures:
proportion of consumed drugs bought without prescription. Time limit for purchase of drugs on a prescription, and compliance therewith. Quality of prescriptions: proportion of apparently irrational prescriptions.

Population:
proportion of population consuming 20%, 50%, 80% of national drug consumption. Consumption by population category (social class, income, region, age, etc.).

4. Finance

Economic operators:

number of state bodies, insurance companies, businesses, NGOs, etc. financing drug consumption.

Drugs:

number of drugs recognized by social insurance, donated by foreign sources of finance. Prices and costs: drug tariffs for insurance systems, management cost of insurance systems, etc.

Procedures:

rates and time it takes for drugs to be reimbursed.

Population:

proportion of population benefiting from various types of insurance (compulsory, voluntary, etc.). Proportion of population benefiting from free drugs ("the poor").

CHAPTER 5

DATA GATHERING

Preparation of the national drug accounts must begin with a diagram of drug circulation, such as that set out on p. 30. This diagram shows the economic operators and the important operations in the national drug economy, as well as the categories selected. Drug movements which are known to be very small can be omitted.

Next, a programme of work is prepared, consisting of indicators for which data must be gathered: what field should these data cover, and with what degree of detail and precision?

The criteria for this programme are:

- human and material resources, and available time,
- difficulty of obtaining data,
- aspects that are least known or which cause the most problems.

1. The gathering of data

Nomenclatures are the headings under which data are gathered. Choice of nomenclatures depends on the objectives (the concepts to be used in the analysis) and on the nomenclatures used in the country, to simplify the gathering of data. These two principles have to be weighed carefully since they can come into conflict.

Data gathering begins with the information which is most easily obtained, before moving on to the more difficult and costly data.

Information available at national level is the easiest to obtain: drug imports, state expenditure, etc (1). This should be collected first.

Next, the economic operators (importers, health services, etc.) are asked to provide some information on themselves. These data arise from the normal management of the operators and from their accounts, where such exist. It is difficult to prepare national accounts if the operators themselves have no accounts or if their accounts are badly kept. In some cases, data can be exhaustive, if operators in the given category (such as wholesalers or social insurance companies) are few. Where there are many operators, surveys are used. In this way statistics based on a representative sample of dispensaries can be applied to all the dispensaries in the country.

1 E.P. Mach and B. Abel-Smith, *Planning the Finances of the Health Sector*: A Manual for Developing Countries WHO, Geneva, 1983, 124 pp.

Finally, there are some data which are difficult to obtain. Unobtainable directly, they can be gleaned indirectly, perhaps in the course of consumer surveys. Pharmaceutical consumption surveys can help us measure a number of useful things: the effects of regulations, the effectiveness and safety of drugs, excessive or abusive consumption of certain drugs or categories of drugs (1). Such studies do not provide information on all these points, but with experience it is possible to run consumption studies that elucidate a number of matters.

The gathering of different sorts of data contribute to the accounts, whose coherence enables us to calculate by addition or subtraction the values of some missing data. The accounts also enable us to cross-check the coherence of data gathered from different sources, and to rectify the least reliable data by means of the most reliable.

2. Annual data and statistical series

It is useful to have these data for each year in order to build up series of statistics for analysis of how the drug system changes in time. Gathering and processing so many statistics each year may seem a lot of work. It can be alleviated as follows: the accounts for a base year are carefully prepared, with precise notation of where and how the data were gathered. This facilitates subsequent gathering. The use of constant ratios obviates the gathering of all the basic statistics. For example, it can be assumed that the trade margin of the dispensaries changes little from one year to the next, as does distribution cost. If only the price paid for drugs by dispensaries is noted, the sale value can be deducted by means of the ratio. Every five or 10 years, all the calculations have to be made afresh, since minor slippage between consecutive years can amount to serious discrepancies after five to 10 years.

In countries with very high inflation, more than 50% per annum, for example, and where currency is devalued several times per annum, monthly or quarterly data are converted into a more stable international currency (such as the dollar) since the values from two months of the same year cannot be set together.

In countries where inflation is more moderate, inflation within a given year is ignored. For comparisons between years, only annual price changes are used, and all values are related to the value in a chosen base year. A simple way of "deflating" these data is to divide the current values by the cost of living index, taking the value of the base year as 100. A more precise method in the case of drugs is to deflate the values of drugs by the indicator of the price of drugs. This is because the price of drugs does not necessarily change at the same rate as the general cost of living.

1 WHO, *The Use of Essential Drugs*, op. cit.

PART 2:

ALTERNATIVE METHODS OF FINANCING ESSENTIAL DRUG SUPPLY

INTRODUCTION:

THE OBJECTIVES TO BE MET BY THE SYSTEM FOR FINANCING ESSENTIAL DRUGS.

Organization of the financing of health services is an enormous problem with many potential solutions that depend on the services concerned and the socioeconomic context in which they operate. Here we deal only with the financing and supply of essential drugs to countries that have problems in these areas. Finance is the organization and circulation of money to pay producers of drugs: who pays whom, how, and using what methods of calculation?

Analysis of the problem and the search for funding can be conducted either in a centralized, national way or in a decentralized, regional or local way. The centralized point of view enables us to examine the problem in a coherent way with all the political, economic, health and pharmaceutical data together. General rules and surveillance of compliance with them must be organized at this level. The search for decentralized solutions accommodates initiatives that would be harder to launch from the central level. The proposed framework for analysis is applicable to both national and peripheral levels.

What objectives should be met by a financing system?

A system to finance drugs must "guarantee the maintenance and regularity of drug supplies, while fostering equity and effectiveness within health care systems" (1) These general objectives can be translated into operational objectives that take account of a number of constraints: supplying sufficient financial resources to cover drug expenditure, balance income and expenditure, pose no threat to the general economy of the country, help the people gain access to drugs, and encourage good management of the system for supply and distribution of drugs, minimizing wastage. These objectives are criteria for choice (2) of financial strategy, along with administrative feasibility, which will not be dealt with here.

1. Provision of sufficient financial resources

Sufficiency of financial resources available for drug requirements is not judged here in terms of needs, since we know that resources are limited and not all needs will be satisfied, but in relation to the wealth of the country and the level of development of its health care system. In this respect, it is obvious that certain sources of finance can provide only modest sums. This does not mean that such sources should be discarded, but a funding system cannot be based on insufficient resources. A system of finance must often combine a variety of resources, none of which in itself would suffice, but which when taken together are sufficient.

1 WHO, *The Use of Essential Drugs*, op. cit.

2 WHO, *Economic Support for National Health for All Strategies*, Geneva, WHO, 1989.

Furthermore, a system for the funding of drugs must be able to finance both expenditure within the country (consumption) and expenditure abroad (imports). Although to some extent related, these two aspects are different.

No system can guarantee income during a serious economic crisis. In such a situation, all the economic operators are short of resources. The plurality of resources affords a certain stability by ensuring that funding does not depend on a single operator or category of operators.

2. Achieving a balance of income and expenditure

If a finance system is to be viable and durable, it must be financially balanced. To this end, a mechanism is needed to balance income and expenditure. This is not simply a matter of finding resources to finance selected expenditure, but of limiting expenditure to the level of available resources: either the finance system or the procurement system must feature a mechanism for regulating expenditure. The framework for analysis set out in the first part allows this to be achieved by:

- setting out drug consumption objectives,
- listing existing resources,
- identifying possible new resources and quantifying them,
- balancing and adjusting income and expenditure.

Yet this is only an accounting framework to ensure that the system is financially balanced. It does not help find new income (whether by reducing wastage or by seeking out new sources of finance), nor does it show how to balance income and expenditure, by indicating what prescribers could do, for example.

3. Not endangering the general economy of the country

It is not for those in charge of the health services to judge what might imperil the economy of their country. Nevertheless, in negotiations with those in charge of that economy, they should be aware of what could be unacceptable to the general economic interest. This criterion is relevant in the funding of drug imports. For example, a finance system which favours excessive imports to the detriment of national production of drugs cannot be recommended. A system for funding drugs that led to a sharp increase in consumption and therefore of imports to a country with very serious external debt problems would also imperil the national economy. This applies also to the level of resources sought: strong funding of health expenditure, especially on drugs, from an economic activity which is of strategic importance for the country and which provides a low surplus, might endanger that activity and the economy of the whole country.

4. Helping the people gain access to essential drugs

A financing system should aim to give the people better access to drugs (in the interests of equity). Current systems for financing drugs have very different consequences from one country to another. In some countries, they give the poorest strata of the population some access to essential drugs though it is often highly unsatisfactory, while in other countries up

to three-quarters of the population have no access whatever to modern drugs. Financing systems should maintain or improve such access and not make it more difficult, especially for poor people who already have very restricted access to drugs. This objective has to do with the general effectiveness of the system.

Giving the people access to drugs does not mean that drugs are always the best and cheapest way to treat health problems. Very low levels of consumption can go hand-in-hand with abusive consumption, especially in self-prescription (1). That is why the people's access to drugs must be evaluated in terms of quality as well: systems of financing and supply should encourage access to essential drugs and their rational use, rather than simply promote increased consumption.

5. Ensuring good management of the drug procurement and distribution system, minimizing unnecessary expenditure

These objectives were examined in the first part. Such good management involves a restricted number of drugs, low cost price and distribution price, no shortages or unused stocks, and ensuring that the quality and quantity of drugs distributed are suited to requirements.

The present crisis of finance systems cannot be solved simply by improving such systems. Increasing the financial resources of malfunctioning pharmaceutical systems could increase wastage, misappropriation and shortages, without actually improving the situation for the people or the running of the pharmaceutical system. Indeed, savings that could be made if management were improved (though this is difficult to put into practice) would be more than enough in many countries to solve all financing problems and achieve a basic minimum drug supply for the entire population. Improvement of drug management and of financing systems should go hand in hand: better selection of drugs at lower prices, better matching of the proportions of drugs bought to therapeutic needs, and better stock management.

Because of the way they run, financing systems affect management. The technical features of financing systems that make for good management of resources should therefore be identified and promoted. The method proposed consists of detailed analysis of these characteristics, using financial systems and drug supply systems synergically.

We suggest that these technical characteristics be divided into three main groups:

- national drug supply (how the country can obtain drugs at the best possible price);
- specific practicalities of funding and managing drugs (how to organize the movement of drugs to consumers and funds to suppliers);
- the quest for funding in accordance with the capacities of the economic agents (who, in the end, pays, and according to what principles?).

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1 A. P. Hardon, *The Use of Modern Pharmaceuticals in a Filipino Village: Doctors' Prescription and Self Medication*.Social Science and Medicine, vol. 25, No. 3, 1987
S. Van der Geest, *Self-Care and the Informal Sale of Drugs in South Cameroon*. Social Science and Medicine, (25), 3.
T. Greenhalgh, *Drug Prescription and Self Medication in India: an Exploratory Survey*. Social Science and Medicine, 1987 (25) 3.

The many effects of the financing system on the people's access to essential drugs depend on a number of factors such as the proportion of the population with very low income and no access to drugs, and the presence or absence of other than financial regulations governing management and use of drugs.

The solutions we seek are probably complex - a combination of improved management, a search for new sources of finance, improved management of drug financing, and better access to drugs for the people. The lack of ideas, imagination, initiative and innovation often is even worse than the lack of financial resources. It is ideas and innovation first and foremost that will solve the financial problems.

We shall examine the following elements in turn:

Chapter 1 - Organization of the financing of national procurement;
Chapter 2 - The search for financing arrangements whose effects on drug management are beneficial;
Chapter 3 - The search for sources of funding in the light of the financial potential of the population.

CHAPTER 1:

ORGANIZATION OF THE FINANCING OF NATIONAL PROCUREMENT

The way in which developing countries are supplied with pharmaceuticals varies greatly from one case to the next: in some countries, local manufacture of active ingredients and commonly used drugs provides for a large part of internal consumption, while in other countries imported products are made up and packaged, and in many other countries between 70% and 100% of the finished products consumed are imported. All developing countries depend on the international market for supplies of active ingredients, excipients, patents and finished products. The key question is whether or not they have foreign currency to pay.

The purpose of organizing the financing of national supplies is to manage chronically scarce foreign currency in such a way as to make essential drugs as widely available as possible. This organization involves a number of factors whose relative importance varies from country to country: the scale and nature of local production, its integration in the national economy, the general organization of foreign trade, regulation of imports, access to international credit, and relations with foreign suppliers.

Effective organization of the financing of national supplies is based on the answers to the following questions:

- under what conditions is local production preferable to imports?
- how can purchase of pharmaceuticals from abroad be organized so as to reduce costs?
- how can the cheapest purchases be made in the international market?
- how much foreign currency is needed, and where can it be obtained?

These questions are interrelated. They do not have simple, across the board answers. After considering different situations with regard to the international market, we shall consider local production and imports.

Section 1: The various national situations with regard to the international pharmaceuticals market

Analysis of movements of drug supplies shows that developing countries benefit very little from the opportunities and new trends of the international market, and that they tend to remain tied to trade circuits and aid systems that are too rigid, and which result in dependence and excessive spending (1). International offer of drugs has diversified, especially since expiry of the patents of many very widely used drugs, and now that there are many more producers of generic drugs, and price competition between major companies has intensified, this movement will continue. How can developing countries benefit from it? How can they gain access to competitive markets in order to reduce their import bill?

In terms of pharmaceutical procurement, there is a great variety of situations in developing countries, depending on the size of the domestic market and the financial capacities of each country. Over and above their differences in terms of economic wealth, countries have different ways of organizing their foreign trade in drugs (state or private monopoly, competition and freedom to import, etc.), and they have different types of supplier, and different ways of managing their payment of foreign debt. Some of these elements are very rigid, at least in the short term: the resources of the country, for example, or the state of the international market. Even with a strong political will it is difficult to influence these factors in the short term. Other constraints on drug procurement are more flexible and can be modified in the medium term by means of an appropriate policy. These are matters of national organization of procurement: local drug production, drug selection, foreign currency management, centralization of purchasing, etc.

In order to finance drug supplies effectively all these factors must be taken into account in organizing a coherent strategy to cope with the international market. Few developing countries have really done this. The critical issue would seem to be that of increasing the negotiating power of poor countries on the international market.

Section 2: Local production of drugs: what are the advantages?

The ability to produce drugs within a country affects two aspects of drug financing: foreign currency and the price of drugs. It also affects other important aspects of policy and management of drugs: their selection and the reliability of supplies.

1. Foreign currency resources

When a country produces most of the drugs it consumes, its foreign currency finance problems can be reduced. They are not completely eliminated, since developing countries still must import a large part and sometimes all of the raw materials: active ingredients, excipients and packaging. They must also pay in foreign currency for patents, licences,

1. Frères d'Hommes, *Le Médicament au Maghreb et en Afrique Noire francophone*, Ed. PUG., Grenoble, 1989

technical support, etc., and they must transfer the profits of foreign companies to the country of origin. This can entail heavy foreign currency expenditure.

Furthermore, industrial producers of pharmaceuticals can have easier access to foreign currency than health services since, unlike the latter, they belong to a productive sector whose regular operation has a direct, visible effect on the economy of the country.

2. Drug prices

The most important impact of national production is the change it makes to the question of drug prices: the country no longer thinks only as a consumer; it must also think as a producer. The effect of local production on drug prices is uncertain: does it make for lower prices or higher prices? The experience of a number of countries shows that there is no general rule. In some cases, generic drug production in the country has led to a drop in prices, while in other cases pharmaceutical industries are set up with considerable customs protection, which shows that their prices are higher than international prices.

Developing countries are prepared to accept higher prices for locally manufactured drugs than for imported drugs because of the advantages of having local production: less foreign currency expenditure, more job creation, guaranteed supplies and simplification of the process of preparing a national drug selection policy. The difficulty is knowing by how much local prices can exceed foreign prices. One can try to measure the value of these advantages and compare them to the excess costs. This can be done for a group of drugs that includes, for example, those for which the advantage is very great and some where the advantages are less clear, but still of strategic importance. This evaluation must be done over a period of several years, since some excess costs are temporary.

3. Drug selection

The existence of local drug production changes the constraints on selection of drugs. The change affects both the industrial and the commercial sides. As regards industrial constraints and the choice of drugs whose production is yet to be set up, the problems concern access to raw materials, licences, patents and know-how. When it comes to reorganization of national production, the problems are related to the cost of conversion for manufacture of new products. Where there is no national pharmaceutical industry, commercial constraints are the only ones. Drug selection measures often directly affect commercial interests, whose controllers can retaliate. The existence of a pharmaceutical industry in the country also affects these interests, but in such cases industrial and commercial conversion can be organized and negotiated.

4. Guaranteed supplies

Supplies of drugs from local industry seem more reliable, in that they are not subject to the vagaries of currency resources, transportation, etc. In practice those imponderables are simply transferred to the industry itself, for which they can be even more serious. For the number of different items that go into a given industry is much higher than the number of articles produced by that industry. Other things being equal, the security of supplies decreases as the variety of different items increases. Whereas in procuring a hundred

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different drugs such hazards affect 100 different products, in the production of a hundred drugs as many as a thousand different products have to be procured by the industry: components, packaging, spare parts etc.

The impact of a local industry on the problem of financing drugs depends on the level of industrial development of the country concerned. Developing countries with a large industrial sector can profit considerably from a local pharmaceutical industry, which can benefit the whole industrial sector. However, this is much more difficult for countries with little industrial experience, for which the presence of a large pharmaceuticals industry could prove an unbearable burden. For such countries, a small, local or regional pharmaceuticals industry might alleviate the problem of external financing of drugs, but only to some degree.

Section 3: Imports: pooling resources

1. Foreign currency

The matter of pharmaceutical procurement on the international market immediately raises the problem of availability of rare resources in the shape of foreign currency. Often given low priority by governments, especially at times when export income is down, the health and drug sector has to demonstrate the usefulness of foreign currency allocations for the purchase of pharmaceutical products. The level of resources it receives will depend on state priorities and any support it can garner from importers and local and foreign suppliers. A considerable proportion of the country's foreign currency, unfortunately, can be spent on illegal importation of pharmaceutical products, which feed the parallel drug market.

International aid can bring foreign currency resources, but has the grave disadvantage of being neither stable nor reliable. Some external funding, which is given on condition that the country buys its provisions from pre-ordained suppliers, limits choices and leads to excessive costs.

Other excess costs in the process of importing drugs are connected with terms of payment and credit. Foreign suppliers add a risk premium to cover insolvency or delays in payment. The more economic difficulties a country has, the more its drugs will cost in foreign currency.

In order to overcome this and make the best arrangements for national pharmaceutical supplies, a country must have foreign currency available on flexible terms and must be able to use it effectively. Whenever possible, the national essential drugs policy should be finalized together with the negotiated allocation of a precise amount of foreign currency to the importing body or bodies.

2. Centralizing purchases

The decision to make a quantified allocation for procurement of drugs and to make a list of products authorized for the internal market will not in itself be enough to reduce import costs; it is necessary to prepare for and conduct negotiations with the suppliers in order to obtain quality drugs at competitive prices. Many developing countries do not have large enough markets or financial resources to give them a good negotiating position. Such weaknesses

are further increased when buyers and importers of drugs are dispersed. Not all arrangements for purchase on the international market that have been tested and put into practice in developing countries have given the same level of satisfaction in terms of low-cost supplies. Whatever the legal status and organizational structure chosen, it seems quite clear that some centralization of purchasing is preferable. For example, the Kenyan experiment in 1987 whereby purchasing was decentralized, was very quickly abandoned because of the very high prices that the arrangement produced.

Centralization of foreign buying need not be the responsibility of a single, public or private company. A consortium of importers can be arranged, although this must involve a clear legal framework and a precise schedule of conditions.

3. Fostering regional cooperation

Many countries are beginning to take advantage of the great potential in working together to take on the hazards of the international market and negotiate competitive prices for their supplies. Thus countries of the Caribbean, Central America and the Maghreb have set up joint purchasing centres for the public sector. This has enabled them to make foreign currency savings of up to 65% on previous prices, thanks to the appeal to international competition, rapid payment of foreign currency bills, purchase in bulk or in hospital packaging, and choice of cheap means of transportation.

This kind of regional cooperation is based initially on strictly commercial and financial considerations such as acquisition of the most sought-after products at the lowest prices. It can be extended so as to broaden the range of products bought jointly, look for ways of producing raw materials together, as well as packaging and finished products, acquire and exchange technical and commercial information, and develop quality control and drug monitoring.

4. A fund for essential drugs

The idea of setting up an international fund for the purchase of essential drugs that was floated by some WHO experts in 1983-1984 should be revived and carried out. The UNICEF initiative for sub-Saharan Africa would gain from being adjusted to fit in with the essential drugs strategy. Whatever its mode of operation, this fund could pursue the following objectives:

- arranging regular supplies of essential drugs of acknowledged quality at the lowest going price on the international market;
- helping buyer countries to gradually become autonomous in drug procurement;
- attracting additional sources of finance in order to expand the purchasing programme to meet needs for essential drugs.

5. Demonstrate the market's movements and the effects of competition

Few developing countries have a profound knowledge of what happens in the international pharmaceutical market, although this would help them procure safe and effective products at the lowest possible price. Scientific and commercial information costs money, and it takes professionals to gather and exploit it. Developed countries and international organizations can help developing countries to improve their knowledge of international market trends, the effects of competition on drug prices, and the suppliers. Thus the European Community project designed to achieve transparency of drug prices in the European Common Market is to allow other countries to have access to databanks in this area. This principle should be given specific form, especially for the benefit of developing countries.

An office to monitor the international pharmaceutical market should be set up as soon as possible, involving all concerned, following on from the Nairobi Conference of 1985. The office should gather all information on new developments in products, prices, supplies and conditions of payment and delivery. It might concentrate initially on the market of essential drugs and on generic drugs in general.

Conclusion

The financing of national drug procurement can be greatly enhanced for countries that have financial problems. The pros and cons of having a pharmaceutical industry in the country should be weighed up carefully in countries with a low degree of industrial development In such cases, the advantages are probably slight, although this does not mean that they should be ignored. The greatest improvements can be achieved with policies that strengthen the negotiating position of the national pharmaceutical system: organizing access to foreign currency in order to benefit from the best possible payment conditions; selecting a restricted number of drugs for purchase, so as to increase the size of orders and become a bigger buyer; centralizing procurement at national or even international level; developing the flow of information on the international drug market, on pharmaceutical raw materials and on techniques, in order to benefit from the advantages of competitive markets.

CHAPTER 2:

THE SEARCH FOR FINANCING ARRANGEMENTS WHOSE EFFECTS ON DRUG MANAGEMENT ARE BENEFICIAL

Systems for financing drug consumption can be defined by the answers to the following questions: what are the sources of finance? how is the money transferred? how is the chain of distribution paid for? These features have important repercussions on drug management.

Drug management is a matter of seeing to the physical movement of drugs from the producers to the final consumers; it involves selection, procurement, distribution and use of drugs (1). Good management entails reducing wastage, or ensuring the best possible satisfaction of drug requirements at the lowest possible cost.

Section 1. The economic nature of sources of finance

Those involved could be the state, local public authorities (for regions, communities or districts), social security organizations, foreign aid, employers, community organizations, such as cooperatives or associations, and the consumers themselves. We do not regard community financing as a separate category. See box (p. 57).

The role of these different bodies in the day-to-day running of the pharmaceutical systems varies greatly, and finance gives them considerable power over how the system runs.

The state, social security bodies and foreign aid can have a say in the selection of drugs. The state and social security bodies often draw up lists of approved drugs, for example for hospitals, or for the treatment of those covered by social security. These lists set out drug selection policy on the basis of many criteria, although with the idea that some drugs are more essential than others. In financing consumption, they can check that the selection is effective, by purchasing the drugs and checking what use is made of the funds allocated, and granting reimbursement only on certain drugs. This option is not always used.

Foreign aid, too, can be selective, when it donates actual drugs, whether because it sees them as best suited to therapeutic needs or because the drugs in question are produced in the donor country (tied aid).

1 *Managing Drug Supply*, op. cit.

The other economic operators (local collectives, community organizations, employers and consumers) do not have the competence to make a selection of drugs and technical criteria. When such operators make the selection themselves, the choice is sometimes based on cost alone (the cheapest or the dearest drugs, depending on circumstances).

These choices are not naturally coherent. National policies on essential drugs must establish coherence between the various lists of drugs drawn up by sources of funding, using a national essential drugs list.

References from page 57

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2 Susan Foster et Nick Drager (1988) *How Community Drug Sales Schemes may Succeed*. World Health Forum, 9, 200-206.
3 Abel-Smith B. Dua A. *Community-financing in Developing Countries: the Potential for the Health Sector*, Health Policy and Planning, 3(2): 95-108 (1988).
4 Fassin D., Fassin, E. (1989) *La Santé publique sans l'Etat? Participation communautaire et Comités de Santé au Sénégal*. Revue Tiers-Monde, XXX, 120.
5 Abel-Smith, B. Dua, A., art. cit.
6 Fassin, D., Fassin, E., art. cit, Foster, S., Drager, N. art. cit.

What is community financing?

Some authors who have surveyed and analysed a variety of approaches to the funding of health services in general and drugs in particular, use the expression "community financing" (1). Without casting doubt on their surveys and analyses, it can be noted that this notion is too vague to be of practical use. The only thing that all the "community financing" methods have in common is finance that derives neither from the state nor from foreign aid. This double negative definition, while it tells us what the financing is not, does not analyse what it is. The term "community financing" covers a wide range of types of financing and types of community; it allows a whole range of questions to be asked, but cannot be used to define a financing system..

There are different types of community financing: sale of drugs (2), payment for service, payment in kind, global financing, etc. These community financing methods are very different, as are their consequences. The term means only that part of the money comes from the beneficiary population. Yet the word "community" has connotations of solidarity, uniting the members of the population concerned (3); it can imply that there is no conflict in the society concerned; it overlooks "the diversity of conflicting interests, especially relationships of domination" (4). If community financing is based on solidarity among the members of the community concerned, it establishes or strengthens horizontal equity, but it may accentuate vertical inequality, excluding the poor from its benefits, or making the poor pay for health services which the well-off parts of the population receive without charge:

> "One of the most serious limitations of community financing mechanisms lies in their inability to bring about greater equity in health care" (5).

This brings us back to analysis of the nature of the community: most cases involve a few villages, occasionally a region of a country or a large district of a city. In other cases, the information relates to specific occupations. What is the unity of the community concerned, and what is the decision-making power in these communities? Usually, the answers to these questions are not provided. In many examples, leadership comes from organizations outside the community (NGOs), or the state plays a very important role, either through financing or through political action (6). Despite the absence of financing, the state usually keeps a very close watch on these community systems, since they are often important channels of political power.

The ambiguities of this relatively vague concept do not detract from the worth of these cases, which we must be able to analyse in detail. Its most important message is that the state and foreign aid are not the only sources of finance.

For references see page 56

Section 2: Methods of financing

There are two main methods of financing drug consumption: global financing, and payment for drugs actually consumed by personally identifiable patients.

1. Payment for drugs actually consumed

When final payment is made by a social welfare body, regulation of expenditure is difficult to organize and can involve very different procedures: a list of authorized drugs, variable rates of reimbursement, etc. These procedures are difficult to apply and entail high management costs. They do not always succeed in stopping misappropriation and in balancing income and expenditure. They do not seem to give the underprivileged access to essential drugs, especially in countries where administration is poorly organized.

Prices and regulation of consumption

When the consumer pays, the level of consumption, on prescription, is finally determined by the price of drugs, the consumer's income and the need which the consumer feels for the drug. Consumption is market-regulated.

As regards demand, there can be no demand unless the income of potential consumers exceeds a certain threshold below which the entire income is devoted to basics that are even more essential than drugs, such as food. Market regulation therefore prevents the poorest people from having access to essential drugs. Furthermore, the level of consumption depends on how the consumers perceive the usefulness of the drugs. This perception varies greatly from one country or social stratum to another. Since consumers' perception is not the same as scientific knowledge, consumers must be given a great deal of information on drugs, so that economic optimum consumption is close to the public health optimum.

As regards supply, the fact of having many suppliers can lead to market competition and low prices, whereas a monopolistic set up can make the market work to the excessive advantage of the monopoly or monopolies.

Those who run the pharmaceutical industries are well aware of how drug markets work in economic terms, but pharmaceutical authorities are not. Consumer behaviour and the structure of demand can produce a drug market which denies large sectors of the population access to essential drugs. The market should always be organized so as to avoid the worst excesses. In order to do so, the authorities must get a better idea of how it works.

Prices and the income-expenditure balance

The payment made is not necessarily a commercial price. It may be less than cost price, for example in a non-commercial system for distribution of drugs where costly, essential drugs may be sold at less than retail price and where less essential, cheaper drugs may have their prices raised. Payment can also cover a service (a consultation or admission to

hospital) as well as the provision of drugs. In some countries, the social welfare system has consumers pay part of the cost of the drug, either as a fixed charge or as a proportion of actual cost. This takes us away from payment for actual consumption of drugs, since most of the financing is from other sources. These non-commercial systems have several advantages: they guide consumers to choose satisfaction of essential needs, they provide resources for payment of the services and drugs which are most in demand, they give the poorest people access to essential drugs at very low prices (1).

The problem with such systems is that the pricing system chosen does not guarantee a balance between income and expenditure. Prices which are too low can lead to high demand for drugs sold at less than cost price, and therefore at a deficit to the system; prices that are too high can result in demand that is too low, which also puts the system in deficit. In order to attain the chosen objectives, the planners must know exactly how the different sectors of the population will react to the pricing system; they must know, for example, whether they will be attracted or put off by expensive drugs. Such "volontarist" pricing systems cannot be set up immediately: prices have to be adjusted in accordance with the reactions of the people. These systems should also take account of their effects on the "black" market. Prices that are very different from those charged in neighbouring countries can give a dangerous boost to smuggling and unregulated movements from various sources.

2. Global financing

This is the most common form of finance when the resources come from an institution (such as the state, social security, companies, etc.). In some systems, consumers pay an annual contribution for health care and drugs, "prepayment"; such systems are very common in developed countries, in the United States, for example, with the health maintenance organizations. They have not been used much in the Third World. We have no detailed accounts of the systems run in countries such as Singapore (2), Thailand (3), or Burundi (4).

Control of expenditure and shortages

In the case of overall financing by an institution, the level of financing allocated is what regulates the amount of expenditure on consumption. This can lead to insufficient financing and shortages. The risk of shortage is essentially linked not only to the total amount of financing allocated, which can be very low, but also to the "psychological risk". Once it is known that the amounts allocated are insufficient, the risk of shortage becomes a reality that increases with the affirmation of its existence; rumours of shortages can create shortages as drugs are hoarded against future shortfalls. In order to ensure that global financing does not lead to shortages, procedures to counteract wastage must be introduced: tight control of stocks, detailed analysis of the use to which drugs are put, etc.

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1 Reveillon, M. *Aspects économiques et financiers de la Participation des Populations au Développement des Services de Santé de Base à Pikine (Sénégal)*, Bruxelles, Medicus Mundi, Belgium, 1987.

2 Phua, K.H. *Singapore's Family Savings Scheme*, World Health, May 1986, pp. 11-12

3 Myers, C.N., Mongkolsmai, D. Cansino, N. *Financing Health Services and Medical Care in Thailand*, Bangkok, 1985, USAID, quoted in The World Bank, Financing Health Services in Developing Countries, op. cit.

4 Mwabu, G. *Options for Payment for Health Services in Africa*, quoted in Financing Health Development: Options, Experiences and Experiments, Geneva, WHO/HSC/87.1.

Overall financing may be either in money or in kind, depending on which economic operator buys the drugs. Finance is in money when the purchaser is very close to the consumer: for example, the state allocates a sum of money to a hospital, which buys drugs and distributes them to the consumers. Finance is in kind when the purchaser is far from the consumers. For example, an international aid organization buys drugs, then donates them to a health service of a beneficiary country, which distributes them to the consumers. These two extreme systems have their respective advantages and disadvantages, which we shall examine; it is possible to organize purchasing systems that combine the advantages of both.

Overall financing in kind

Financing in kind involves the financier directly in selection of drugs and in choice of quantities to be bought and distributed. This relieves the final distributor of these functions. Such a mode of operation makes it very difficult in terms of quality and quantity to match drug purchasing to drug consumption. There is therefore a risk of shortages, dead stock and expiry of stock. The purchaser, who is far from the stage of final consumption, has difficulty in gaining a very clear idea of the structure of pharmaceutical needs as seen by each final distributor, which makes it hard to take decisions in view of the available funding. Yet this procedure has two potential advantages: low purchase price and simple management. Unit purchase prices can be lower because greater quantities are bought and it is easier to put offers out to tender. Management is simple because there is no attempt to fine tune quantities to requirements, when set quantities are sent directly to the final distributors. Procedures carried out only in some locations can ensure that all recipients receive the drugs in good time. This is the kit distribution system used in Kenya or Guinea for example (1), or in emergency situations. When the consignment is sent to intermediate depots (such as regional pharmacies), there is the risk that some final recipients do not actually receive the drugs, and that others, such as regional hospitals, receive the lion's share of the drugs.

Overall financing in currency

When the global financing is in currency, it is the final distributor who purchases the drugs. This makes for precise adjustment of quantities of drugs bought to local needs (diseases, prescribing habits, etc.), and should in theory reduce wastage and shortages, since the local distributors are responsible for setting the quantities of drugs ordered. With such a method it can be ensured that the funds allocated are used well by the drug distributor, who buys no drugs for others. The disadvantages correspond to the advantages of financing in kind: it is difficult for a final distributor to find low purchase prices, and management is more complex. This complexity calls not so much for more money as for more competence in precisely matching quantities purchased to needs and available funds.

Organization of drug orders

The financing and the purchase of drugs can be organized in such a way as to benefit from the advantages of both the systems examined above. The idea is both to purchase in large quantities in order to benefit from low prices and to be able to match orders accurately to requirements. There are two options: purchasing centres, and orders from an allocated budget. Both systems ensure that the drugs bought are on the approved list. With purchasing centres, the final recipients receive money from the financier and club together to buy from

1 Waty, M.O. op. cit.

the suppliers. The centre can function as a wholesaler owned by the clients. It can also be responsible for examining bids and checking the quality of products, without itself either buying or selling drugs. Problems arise with purchasing centres when the solidarity among partners is not sufficiently strong: in such cases the logic of exchange and short-term interest dictates behaviour (refusal to pay on time or to buy consistently from the centre), when the centre does not have the resources to cope with these hazards.

The ordering system in an allocated budget works as follows: the financing body transfers the funds to an intermediary, from which each recipient can take supplies of drugs up to the allocated limit. The intermediary buys the drugs; it has working capital and finance for its own running costs. Each final recipient chooses the drugs he needs in accordance with his allocation of funds and the prices of products.

Section 3: How the distributors are paid

By payment of distributors we mean remuneration of distribution services and especially remuneration of people. The wholesale and retail distributors must be remunerated, since their work has a price. This remuneration, its amount and the way it is paid, has an effect on the objectives in view.

The amount of such remuneration is an important part of the cost of procurement and distribution of drugs. If the amount is too low, the means of distribution may well be inadequate, and the work will be poorly done. If the amount is too high, distribution takes up resources that could be better used elsewhere, especially in giving the people access to essential drugs. There is no standard to let us know if this remuneration is at the right level (see Part 1). Nevertheless, there are a few useful indicators: if it is difficult to recruit staff, then remuneration may be too low, while income that is much higher than that received by staff of similar competence in the country indicates that remuneration is too high.

The method of remuneration affects the management of drugs and the matching of distributed drugs to requirements. As in the case of global financing, there are two extreme situations, whose advantages and disadvantages we shall examine, before considering intermediate situations that combine the advantages of both extremes. The extremes are remuneration completely dependent on distribution, and remuneration irrespective of distribution.

Where there is no connection whatever between remuneration and distribution the matter is rather simple: there is no financial incentive to manage distribution at all. The funds for the financing of distribution are completely separate from those for the purchase of drugs. In this case good management depends on such incentives as professional ethics, the notion of public service, career development depending on performance, etc. Without them, the distribution system may be ineffective, with poor stock management, excessive delays in procuring drugs, misappropriation, etc.

If remuneration depends on the activity, then the situation resembles commercial distribution: remuneration is a proportion of the value of drugs distributed. This makes for distribution of the most profitable drugs to the consumers or health services that are best able to pay. This system leads to a good balance between quantities of drugs distributed and drugs actually consumed, because the excess cost of bad distribution is borne by the distributor: expiry of

superfluous drugs, loss of sales of drugs bought in insufficient quantity, theft and misappropriation. However, this incentive applies only if the orders are made by the distributor. A system such as that in Guinea, where the distributor does not choose his orders, results in a poor balancing of orders and drugs consumed (1).

There are many intermediate possibilities (2). For example, retail distribution can be remunerated irrespective of the price of the drugs distributed, since the work of distribution is the same whatever the cost of the drugs. In this way remuneration is linked not to the value of the drugs distributed but to their volume. The distribution cost could be either fixed or proportional to sale price, as long as that proportion falls for more expensive drugs. That system is fairly difficult to set up and supervise. Remuneration could also be through an intermediate system, if for example a number of fixed costs are financed separately (investment, revolving fund, etc.).

Conclusion: The best methods of funding are not enough

All the conceivable methods of funding have advantages and disadvantages in terms of the chosen objectives. Those that derive from commercial logic involve high costs and do not cater for access to essential drugs for the poorest people. Those developed from administrative thinking tend to involve wastage and shortages. A number of financing schemes avoid the worst excesses of either extreme. But financing methods are not enough. The drug management system has to be regulated in other ways, too, including organization of drug selection, personnel management, promotion of the essential drugs policy, solidarity between the different sectors of the population, and refutation of the notion that shortages are inevitable. These tasks are the responsibility of the state, which must see to the running of all public health services. Privatization or nationalization of the supply system may be envisaged, but neither is a solution in itself (see box p.64).

1. Drug selection

As we have seen, selection can be influenced by the economic operators who provide the finance, by the financing arrangements, and by the way the distributors are remunerated. It is clearly the responsibility of the state to keep very strict control of this selection (through regulation). For the selection to be effective, the authorities must gain the cooperation of all who are economically involved in drugs: producers, distributors, consumers and especially prescribers. Prescribers have a crucial role to play in the rational regulation of consumption. Such cooperation is the only guarantee that the selection made will be rigorously applied.

2. Encouraging everyone to support the essential drugs policy

Such support is not spontaneous, since new policies can upset habits and vested interests. There are two ways of obtaining such support: wide-ranging participation in development of this policy and its methods of application, and explanation of the aims, content, expected results and actual results obtained from rigorous selection of drugs.

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1 Waty, M.O. *Analysis of Cost Recovery System*, National EPI/PHC/MHC Programme, Republic of Guinea, WHO mission report, March 1989. Geneva, WHO-PAME.

2 Réseau Médicament et Technologies biomédicales adaptées, pour une Politique nationale du Médicament. *Outils de réflexion et d'action*, Paris, Ministère de la Coopération, 1989, 81 pp.

3. Organizing personnel management

There is no substitute for competent and motivated staff. Staff must be trained in stock management and managers must be trained in the utilization of limited resources, whatever system of financing is chosen. As regards staff motivation, an appropriate level of pay is obviously important, but every element of personnel management has its effect: appointments, promotions, participation, sanctions and incentives, etc.

4. Fostering solidarity between the different categories of population

Solidarity does not come to order. It is largely the product of the historical development of each country. Here again, advertising the positive good effects of solidarity can help strengthen it.

5. Refuting the notion that shortages are inevitable

The drug distribution services of Third World countries have a long experience of shortages: empty shelves, uncertainty on restocking, etc. The idea that these shortages are neither inevitable nor always caused by lack of money (but rather by bad management) must be put across.

Privatization or Nationalization?

Privatization and nationalization are symmetrical measures related to company ownership. By privatization, we mean sale of public companies to private holders of capital; by nationalization we mean assumption of direct control of previously private businesses by the state. The motivation behind these operations is often more political or ideological than economic. Here we deal only with their economic justification.

In themselves, privatization and nationalization solve few problems. In specific economic contexts they may help to improve the drug supply and distribution system. The public or private nature of businesses does not necessarily give a reliable indication of how they work. There are private businesses that work for the general interest and public businesses that do not. Privatization does not mean complete abandonment by the state. What rules of operation apply to private companies? The state can leave private companies to run operations, while setting out very specific rules. One example is that of marketing licences. On the other hand there are public companies which have little concern for the general interest, for example, when they take on too many staff, produce little and have the state underwrite deficits, while some public companies go for high profits without worrying about the requirements of public health.

States may decide to privatize or nationalize companies for economic reasons under specific circumstances. Nationalization can sometimes be the only way for a state to make companies apply legislation and regulations. Privatization can enable the state to change the running of public businesses that have proved inefficient or too independent of the state and of the market. Privatization subjects them at least to the economic rule of not making losses.

Privatization or nationalization policies are unjustified economically when the state is able to set out general rules for the running of businesses - such as drug distribution - and to see that they are observed. This ability varies greatly from one country or period to another. This is why privatization or nationalization measures can have an economic rationale.

In many countries, the setting up of semi-private businesses with combined private and state capital reconciles the two requirements of observance of the rules of general interest (defined by the state) and observance of the rules of immediate economic effectiveness (at least in balancing income and expenditure). Of itself this status of semi-private business guarantees nothing; this type of business can acquire the bad habits of either private companies or public companies.

CHAPTER 3:

THE SEARCH FOR POSSIBLE SOURCES OF FUNDING

What are the possible sources of finance? There are two easy sources to identify: international finance and the state - and a more complex source to analyse: financing by the population, also known as community financing. We shall set aside financing by the resources of the health services themselves. Those resources derive from industrial, commercial and agricultural activities; their profits may be used to finance the purchase of drugs. From the economic point of view, these activities come under production rather than the health service, and the use of their profits for the benefit of the health services should be regarded in the same way as gifts from the population: these are voluntary contributions which do not amount to much at country level.

International financing will not be considered in detail. We note simply that it exists, that it is a short-term solution of great significance in poor and small countries especially (for example in provision of working capital for a supply system), and that there are great organizational problems when this funding has to be accommodated with the aims of an autonomous, national pharmaceutical policy. The main resources are in the developing countries themselves (1).

State funding is the basic source of financing. It will be examined in Section 1.

The recourse to financing by the population, which some call community financing (see, box on the concept of community financing p. 57), has always existed in most countries. The novel aspect is the systematic nature of this financing. It should be examined in the light of the criteria of effectiveness and equity: Can community financing provide sufficient resources? Can it improve the management of drug circulation? Can it improve access to essential drugs for the people? In replying to these questions, we cannot regard the population as homogeneous: we must firstly distinguish those who are sick from those who are well. Financing by the sick alone has very serious limitations: they often have reduced incomes because of their illness, and it is hard for them to pay large bills that come out of the blue. In almost all categories of population, payment by the patients cannot cover the costs of all the essential drugs required. For developed countries, direct financing by the sick covers only a small proportion of pharmaceutical expenditure, in comparison to the proportion financed by the state or by social security. Systems of prepayment by the healthy make for more effective and equitable financing. The question is what part of the population should be involved in prepayment schemes, and how this will redistribute resources from the well to the sick? The analysis starts from the assumption that the nature of the problem changes with the level of income of the population concerned (Section 2). This is followed by examination

1 Howard, L.M. *What are the Financial Resources for "Health 2000"?* World Health Forum, 2(1): 23-29 (1981).

of ways of organizing prepayment systems referred to as "non-state collective financing" since it is not always the beneficiaries of these systems who finance them (Section 3).

Section 1: Financing by the state

The degree of state financing is determined, in part, by the level of wealth of the country and by the proportion of this wealth that passes through state coffers. The allocation of state resources to the various possible uses is also a political choice. Even setting aside the cases of countries at war, whether civil war or war with neighbours - and which are therefore to some extent compelled to make heavy expenditure on the military - it is clear that the "social" part of expenditure (education, health, housing and subsidization of the bare necessities) varies considerably from one country to another depending on the choices made by the political authorities, often with the support of public opinion and the ruling classes and international institutions.

In health expenditure, spending on drugs tends to be both high and particularly affected by the economic situation. Drug expenditure is actually higher in relative terms in poor countries than in rich countries, since expenditure on staff is relatively lower. All other things being equal, a physician or a nurse is paid less in a poor country than in a rich country, while drugs cost the same. Changes resulting from the economic climate make it easier for the state to raise or lower the level of drugs purchased than to change expenditure on staff. It is not easy to increase the number of physicians, nurses and pharmacists to be trained, nor can they be sacked without risk of social unrest: it is easier to increase or reduce drug orders. If reduction of state financing is not at least partially compensated by new resources, the health, social and economic consequences can be very serious for the entire population and the country as a whole.

The generally difficult economic situation of Third World countries places severe limitations on state financing of drugs. The recession of fiscal income, the growing burden of debt servicing, the need to reduce the budget deficit and the ease with which this type of expenditure can be reduced, all exert very strong pressure on the state to stop providing finance in this area. In this context, new state resources can be found, without compromising the overall fiscal system, which could become more just and fruitful. Not all available resources are exploited, though they should be, even if they are not very large:

1. Taxes and levies allocated to drugs

Taxation on lotteries, alcohol and tobacco consumption, or other consumption regarded as non-essential, can provide considerable financial resources. The practice of allocating such income to drugs or to health in general, makes the idea much more acceptable to the population. To make this allocation obvious and secure, the sums concerned should pass through a fund with separate accounts.

2. Local and regional authorities

These authorities, too, can help finance people's access to essential drugs. The funds available may be low, but since they are managed in a decentralized way, they may be easier to negotiate than those from central authorities (such as the ministry of finance or the president's office).

Section 2: Financing by the population

The objectives that could be obtained through financing by the population are: additional resources: the amount will vary considerably depending on the income of the population; feedback: when the population pays for the services and the drugs supplied, it is more attentive to their quality, so that the health services for their part have to pay more attention to management and the quality of service. Health services are not accountable only to the state: they must also take account of how those whom they are serving react. But financing by the population is difficult to manage: there is almost always a drop in drug consumption when a charge is made without prior analysis of the patients' ability to pay, and when this new source of financing is used to reduce the contribution from other sources rather than to improve the quality of services on offer. Whether this is a matter of direct payment by patients or indirect payment by prepayment systems, the economy of payment systems should take account of the ability to pay of the population for which they are designed.

Populations can be divided into three categories of ability to provide financing: those who are practically without monetary income, those with low or irregular income, and those whose income is higher and more regular.

This is a rough and ready categorization of the population. Its use in a specific country or region calls for some thought, or at least, in the first instance, for hypotheses concerning that population. The categorization within a country is based on the situation there and on the drug supply policy the country wishes to operate. For this reason, no precise and generally applicable definition can be given to the categories proposed.

Once the groups have been identified, the next question is whether or not each category must have its own system of supplies. For example, either the populations are mixed, as in a large city, or they are not mixed, as in a refugee camp, an entire region or a large urban district containing almost exclusively a single category of population. In the latter case, it is not difficult to organize a specific supply and financing system, because the problems to be solved are homogeneous. This is the simplest case, but it is not the most frequently encountered (1). Where different strata and categories live together in the same area, there can be no single system because either it would be geared to the high-income population, leaving the rest without access to essential drugs, or it would be adapted to the low-income population, which would place a heavy burden on the sources of financing, and the wealthier people would be dissatisfied with the level of services supplied. Two or more systems that can operate together should therefore be organized.

1. The financing of drugs for the population without monetary income

This population has extreme difficulty in paying for drugs. It might provide labour for the building of stores and transportation of drugs, and it might pay the distributors in kind, but often to a very limited extent. Other sources of finance must be found such as: the state, local groups, specific taxes or levies, foreign aid, etc. Without such help, this category will not have access to essential drugs and will thus turn towards the parallel market, which is more in line with its economic resources.

1 Brian Abel-Smith, *Health Economics in Developing Countries*. Journal of Tropical Medicine and Hygiene 1989, 92, 229, 241

When this population is living alongside people with an income (as the poorest inhabitants of cities do, for example), the problem is that of organizing a system of drugs at no charge. Many countries have set up systems designed for the "needy", to provide them with free drugs. Yet if the standard of living of the general population falls, then an increasing proportion of the population benefits from free drugs, which makes the system increasingly expensive. These systems for the "poor" can only work in the long run if they are designed for an easily defined population (such as handicapped people who cannot work, abandoned children, etc.) and provide a bare minimum of drugs, not enough to tempt the population at large to try to obtain them. They are effectively applied only if designed for a very small sector of the population. In Seoul, for example, the system for protection of people on low income covers 8% of the population, and less than 2% are classed as needy (1). Yet Korea is a relatively developed country. The poorest countries seem to have the greatest difficulties in financing the consumption of their poorest people, who are relatively numerous. Many of the methods for financing by the population that have been tried include free distribution of drugs and treatment to "the needy". Management committees define that group in the light of local conditions. Up to 10% of health service users can thus benefit from free treatment. Other schemes should be tried out, and existing ones should be surveyed and analysed.

2. Financing drugs for those whose income is low and unreliable

This category represents the vast majority of the population of most Third World countries: peasants, craftsmen, street vendors, wage earners at the bottom of the pay scale.

Such people have sufficient income to participate in financing drugs, but not enough to gain access to what is regarded as the bare minimum. Such people can work to reduce distribution costs more easily than those without income, who are often alienated. This intermediate sector can also contribute financially to the purchase price of drugs, paying a higher proportion of the price of cheaper drugs. Yet this population cannot finance all the costs of its supplies of essential drugs.

The problem is that of organizing joint financing of consumption by the population and external sources of funding. There are three essential questions: How are the irregular resources of the population to be mobilized? What proportion of expenditure will each source of funding cover? How is the management of multiple financing systems to be organized?

2.1 Mobilizing the resources of those whose income is low and unreliable

Many projects in health, and in other domains such as banking and agriculture, show that it is possible to mobilize relatively high levels of resources and considerably enhance the level of satisfaction of needs, if there is good organization to provide quality care at reasonable cost.

When payment is the means of increasing the availability of drugs or other supplies required for health care (such as laboratory reagents and expendables), the quality of care is improved, and with it the satisfaction of patients and their confidence in the health services. This encourages them to make more use of the services. This process gets under way if the new resources actually improve the distribution of drugs rather than merely substituting other resources.

1 Moon, O.R., *Towards Equity in Health Care*, World Health, May 1986, pp. 20-21.

Since the income of this sector of the population is irregular, good mobilization of resources calls for organization that takes account of this, and of the irregularity of requirements for drugs. The best method is that of gathering funds when the population has money, for example after the sale of the harvest in the case of peasants. The experience of Burundi (1) shows that this is possible: annual purchase of a "health card" entitles users to preferential access to drugs and treatment. The methods used should match the way the population earns.

Non-monetary resources, too, can be mobilized: building pharmacies in periods when the population is not taken up with other work, and work to repay the drug distributors. However, although these resources in kind can make some contribution, they rarely match the scale of the problem: pharmacies are only built once, and work in exchange for drug distribution is feasible only for a small number of those involved. Furthermore, such methods call for considerable solidarity among people who supply work in exchange for benefits they will not enjoy immediately.

2.2. *How is the cost to be divided?*

Resources in kind or in labour can be used only for certain expenditure, such as building costs. The other costs are monetary. There are several possible principles of distribution. The final aim is for total income to finance total costs. For best results several simulations must be run, and when a system is tried out it must be modified in view of the results.

In the first place, it must be decided in what circumstances drugs are to be paid for. The principle of payment for all drugs (if only at a token price) must have two exceptions: certain categories of the population do not pay or pay less (such as young children or pregnant women), and some drugs are free or less expensive (such as drugs for tuberculosis or leprosy). These categories must be identified in accordance with national policy and the local situation. It is then possible to calculate the amount of resources sought (2).

At the next stage, a simple method is to allocate specific incomes to specific expenditure. Each source of finance could go towards that for which it is most effective (3). Thus, for example, the source of finance that has access to the best-priced drugs could be entrusted with their purchase and could finance them. Another practice is that of allocating fixed income (subsidies, "health cards") to fixed costs (wages, maintenance of equipment, drug transportation etc.); and varying income (payments that vary with consumption) could be attributed to varying costs (drug purchases). This cannot always work across the board, since there is no guarantee that these categories of costs and income balance off, and external sources often prefer financing in kind (drugs) to providing money to pay for wages, for example. Financing in kind (drugs) can be used to fund the initial stock and its subsequent growth. Practical solutions come from practical experience. There is no general solution.

1 Médecins sans Frontières. *Financement des Systèmes de Santé*, document technique, Brussels, European Association for Health Development, 1990.

2 Ellis R.P. *The Revenue generating Potential of Users Fees in Kenyan Government Health Facilities*, Soc. Sci. Med vol 25, No 9, pp 995-1002, 1987.

3 Marc Réveillon, op. cit.

2.3 *How are multiple funding systems to be managed?*

The diversity of financing systems poses a management problem. The process of supplying drugs combines purchase of drugs by distribution facilities with contributions of drugs by the state or external aid, where distribution is partly free and partly paid. This presents the risk of combining all the disadvantages of all the systems rather than all the advantages: management that squanders drugs received without payment, non-respect of restrictive lists in purchase of overpriced drugs, free distribution of all drugs when it is impossible to restock, or sale of drugs for the personal profit of those responsible for managing them.

The solution is to coordinate, negotiate or regulate limitation of damage: respect for lists of essential drugs, supervision of methods of procurement, attribution of one method of financing to payment of one resource, rules for giving drugs free or at reduced charge depending on the nature of the drug rather than on the population receiving them, etc.

Procedures must also be established for transfer of funds gathered at local level, whatever their origin, to a central level responsible for purchase of drugs.

3. Financing of drugs by the population with regular incomes

This sector includes civil servants, wage earners in business, tradespeople and the relatively wealthy peasants. Barring shortage or lack of a distribution system, such people have access to drugs. Since it has monetary income, this sector of the population benefits fully from all the measures taken to reduce the price of drugs and improve their availability.

It can pay for most essential drugs without any great hardship, as long as prices are not excessive The problem with this sector of the population is that of not being able to pay for expensive drugs or long courses of treatment. The solution is to set up systems of collective financing that can be limited to expensive treatment: the most expensive drugs (restricted list), long courses of treatment, hospitalization. Since they have a reasonable income, these people can help with the financing.

Over and above this, the systems of collective financing or mutual expenditure make for greater access to essential drugs. The main problem is that of solidarity. For these systems to work, they must work for sectors of the population whose members have a strong sense of solidarity with one another. These might be employees of a company or an agricultural cooperative, or of a commercial purchasing group, etc. It is worth basing collection of resources on what unites the group: a part of the wage for wage earners, a part of the profits for cooperative workers, etc. There are as many possible solutions as there are existing or potential forms of solidarity.

In many countries, research into finance systems tailored to the different categories of population can lead to the maintenance or formation of different systems of drug supply, such as a public system and a private system. It is often difficult for these systems to coexist. Significant progress in the people's access to essential drugs can be made by harmonizing those systems better.

Section 3: Non-state collective financing

For the population which has an income, especially if it is irregular, the existence of systems of collective financing increases access to essential drugs. Collective financing does not leave the financial burden on the shoulders of the patient during illness, but distributes it among other economic operators, who might be identified as the healthy population. Which method is best?

The archetype of collective financing of health expenditure is social security. There are several prerequisites to a social security system that finances health expenditure: a population which believes that disease can be countered with treatment and drugs, which has access to appropriate and effective treatment, and which evinces extensive solidarity. Balancing of expenditure is possible; solidarity which is more extensive than the local variety often has to be built up. The history of social security in the world shows that such systems have been set up in a variety of ways in different countries at different times (1). Such systems have always been set up by specific economic operators, not always the same ones, to discharge functions that vary from one instance to another. Their principles of operation and methods of organization differ in accordance with the economic operators who set up the social security system. The best way to ensure that a social security system works is to make sure that it corresponds to the real aims of the economic operators who originated it, and that those operators who finance it are as supportive as possible. Mostly it is not a matter of setting up entire social security systems (with health insurance, unemployment benefit, old-age pensions, etc.) but of finding the financial resources to separate the gathering of funds from the consumption of drugs. The general principles of social security (health insurance) can be applied at smaller than national scales. It is not necessary therefore to insist at all costs on a health insurance system, that can have a number of drawbacks: tendency to give preference to curative activities in urban areas, to develop a bureaucracy which is not linked to health policy, and to cause inflation through failure to look for efficient ways of working (2).

If a system of compulsory, collective financing is set up, it will be akin to a state system, and the funds collected will be similar to taxes. While this kind of set-up or development for financing drugs may suit some countries, one should not forget that replacement of state financing of drugs with compulsory and universal social security is merely a modification of a means of organizing finance, rather than a search for radically new sources of finance.

1. Financing by companies: the function of personnel management

Many companies, such as railways or mines, have set up social security systems or more simply dispensaries that distribute drugs, either spontaneously to improve the working potential of the personnel, or to bind the workforce with an indirect salary, or after social struggle in which the workforce pursues its claims. These systems are based on a wage-earning workforce and a degree of organization of employers: large companies, employers' associations, and prosperous businesses. Such systems usually benefit only the employees of the companies concerned.

1 F. Sellier, *Dynamique des Besoins sociaux*, Paris, 1970, Editions Ouvrières.

2 Abel-Smith B., *Funding Health for All: is Insurance the Answer?* World Health Forum, 7: 3-33 (1986). See also the discussion which follows this article.

2. Hospitals: the "commercial" function

The North American "Blue Cross" and "Blue Shield" are social security systems set up initially by the hospitals. People who make an annual or monthly payment have free or low-cost access to a number of services (admission to hospital, consultations, drugs). For drugs, distributors can therefore organize systems that provide a certain degree of finance. The "health card" is proof of that. Such systems of funding are selected when the health facilities are the best organized entities in a country or region.

3. Various population groups: the function of solidarity

A number of highly organized occupations have a history of mutual funds to finance, for example, the funeral expenses of their members (such as the glovers of Grenoble in France, who set up in the 19th century one of the first mutual funds). Sometimes just within the law, these associations aim for solidarity within a social group. In many Third World countries there are more or less formal groups that embody such solidarity. Their basis varies greatly: economic (cooperatives, buyers' groups), trade unions, religions, ethnic groups, etc. Insofar as there is solidarity or trust within the group, it can organize the collective financing of drug consumption that is limited to expensive drugs and treatment. The experience of Latin America (1) shows that community participation in health programmes tends to be more successful when the social distinctions within the society concerned are weaker.

These different ways of arranging for social protection can be applied in all Third World countries. Several parallel systems can coexist within a single country. Any given system is better adapted to some categories of the population than to others. The establishment of such systems therefore presupposes identification of the categories of population, so that the basis of solidarity among its members can be defined.

1 A. Ugalde, *Ideological Dimensions of Community Participation in Latin America Health Programs*, Soc. Sci. Mec Vol 21, No 1, pp 41-53, 1985.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The preceding chapters have analysed the main economic and financial dimensions of essential drugs programmes. We must now see what is to be done with this analysis, and how solutions are to be sought. The actual situations for which financing alternatives are sought can vary greatly; here we shall consider only a few general principles. Finance should be a tool to satisfy people's drug requirements.

The problem of the economics and financing of essential drugs is commonly voiced as follows: "There is not enough money to pay for the drugs the people need"; in other words: "The cost of supplying drugs is too high for even basic needs to be satisfied". What is called for, therefore, is more money and lower supply costs. This can lead to the following measures: having the people pay for drugs which had been free of charge, and finding less costly sources of supplies. This strategy can furnish interesting results, but it is likely to encounter a whole range of difficulties owing to the real complexity of the problem[1]: the population has little or no money to buy drugs, and having them pay can result in a drop in consumption; the supply network cannot change supplier, and drug shortages persist.

Rather than pose the financing problem in isolation, one should consider the population and drugs as the key points of the problem: how can drugs be made available to the people? That is the question. Finance money and prices are no more than economic instruments that should contribute to the solution. The strategy proposed is that of seeking priorities on the basis of a precise description of the way in which the people do or do not satisfy their drug requirements.

There are two sides to this description: the people, and drugs. These are two approaches to the same problem, with two different but complementary rationales: the logic of needs and the logic of products. This duality leads to methodological differences: the former centres on consideration of how to satisfy needs, in relation to the health problems and the social and economic features of the population; the latter concentrates on the drug supply chain, analysis of movements, costs and malfunctions. Because they are complementary, the two approaches must be considered either together or successively. Only then can the problem of financing be fully examined as described above. An analysis of prices and financing can also be made: To what extent do changes in procedures of drug management and finance help drug requirements of the population? We need to look at:

1. The population and its access to essential drugs:
2. Drugs: how the supply chain works,
3. Financing drugs: What arrangements for the circulation of money should be amended or set up?

1. Access to essential drugs: defining the beneficiary population

Observing access to drugs in a country, one is struck by the great variety of situations, as regards actual access to essential drugs, obstacles to such access, and the people's potential for organizing or being organized to cope with this problem.

The method proposed is that of categorizing the population in groups whose members encounter similar obstacles to drug access. These categories should be operationally identifiable - for example the population of a given region, wage earners, etc. The number of categories should be relatively low (perhaps between 6 and 12).

Criteria for categorizing the population in order to establish priorities

1. Drug requirements: health problems and the drugs to remedy them.

2. Actual access to drugs: annual average consumption.

3. Factors limiting access:
   - lack of nearby health and pharmaceutical infrastructures,
   - drug shortages.

4. Economic factors:
   - population without monetary income,
   - population with low and irregular income,
   - population able to buy common drugs, but not expensive drugs even if vital,
   - population with sufficient income to buy essential drugs.

5. Psychocultural factors:
   - population with no confidence in modern medicine and drugs,
   - population with confidence in modern medicine and drugs.

6. Organizational factors:
   - population organized in close-knit communities,
   - population not organized in close-knit communities.

The classification is not an end in itself: it is a tool for analysing the quality and degree of satisfaction of the needs of different categories of the population. The situation for each category can be diagnosed, after which the categories of population can be set in order of priority, and within each category the problems can be prioritized.

This examination of categories of population can apply to units of different sizes: countries, regions or districts.

2. Drugs: reducing malfunctions in the supply line

The accounts and associated indicators described in the first part propose a framework for analysis of procurement, distribution, financing and consumption of drugs. The purpose of such analysis is to describe and explain malfunctions in the drug supply line or lines.

Criteria for analysis of malfunctions in drug supplies

1. The drug supply and distribution system (or systems) used.

2. The malfunctions observed:
   - shortages of essential drugs (breaks in the supply line),
   - excessive prices (when purchased/excessive distribution costs/excessive sale price)
   - inappropriate financing: do state and foreign aid benefit the poorest people?
   - irrational prescription.

3. What causes these malfunctions?
   - lax selection of drugs: too many drugs for the supply line, too many non-essential drugs.
   - methods of financing, payment and ordering that lead to excessive prices and poor matching of supply to demand, increasing inequality within the population.
   - prescribers ill-informed on drugs and their rational use.
   - regulations inadequate or not applied.

This analysis identifies priorities for improved operation of the pharmaceutical system. One criterion for choice of an activity might be a reduction in the price of prescriptions. Another might be a reduction in shortages of vital drugs.

3. Financing: who pays whom, how much, and how?

What ways of circulating money should be modified or set up in order to improve the operation of the supply line and the access of people to essential drugs? The matter of financing is only part of the problem and perhaps not the most important part; drug selection might be the strategic issue.

A diagnosis is to be made and solutions are to be sought for each of the selected categories of population, and also at national level, since a number of problems are common to all categories. This process is based on two previous analyses, whose results are compared: can the priorities identified for improvement of the drug network improve people's access to essential drugs? How can the obstacles to access be removed so as to make the whole network function better?

This third phase of preparation of the strategy consists of answering the following questions: how much money for drugs? Who provides the money? Who will benefit? How will the money be collected? How will it be used? The method proposed divides into two parts which involves some toing and froing, since each affects the other: preparation of a table showing the financing of consumption, and choice of the methods of financing and payment.

3.1 The table shows finance of consumption

The rows show the overall total consumption which is the target for each category of population, and the columns show the level of financial resources obtainable from each source. This table of finance is prepared in stages: extrapolation from past trends, and negotiations with financing bodies.

3.2 Methods of financing and payment

How can each source of finance make its contribution? How are these funds used to pay for drugs and pay for the procurement system? How are the funds gathered? How is the system of drug orders to be improved? The specific procedures for financing, payment and purchase of drugs at each stage in the process is to be defined.

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